WORLD'S LARGEST SHIP-REPAIR ORGANIZATION

PLANT OF ROBINS DRY DOCK & REPAIR COMPANY, ERIE BASIN, BROOKLYN, N. Y.

SHIP BUILDERS
AND REPAIRERS
BOILERMAKERS
PARSONS TURBINES
OIL BURNING
INSTALLATIONS
ELECTRIC DRIVE
EQUIPMENT

NINETEEN
FLOATING DOCKS
TWO GRAVING DOCKS
TWELVE SHIPWAYS

PLANTS

ROBINS DRY DOCK & REPAIR COMPANY
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CLINTON DRY DOCKS, INC.
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WHITE FUEL OIL ENGINEERING CORP.
Todd and White Oil Burning Systems
742 East 12th Street, New York City

TODD DRY DOCK & CONSTRUCTION CORP.
Tacoma, Washington

TODD DRY DOCKS, INC.
Harbor Island, 16th Ave. S. W.,
Seattle, Wash.

TODD · SHIPYARDS CORPORATION

CABLE "ROBIN" NEW YORK ALL CODES MAIN OFFICE 25 BROADWAY NEW YORK TELEPHONE BOWLING GREEN 6900

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Engineering Library

MOTORSHIP NUMBER

FEBRUARY, 1922

Marine Engineer and Shipping Age

THE Wm CRAMP & SONS S.&E. BLDG. CO.
PHILADELPHIA, PA. U.S.A.
BUILDERS OF COMPLETE MOTORSHIPS TO ONE STANDARD OF WORKMANSHIP AND ONE GUARANTEE OF PERFORMANCE
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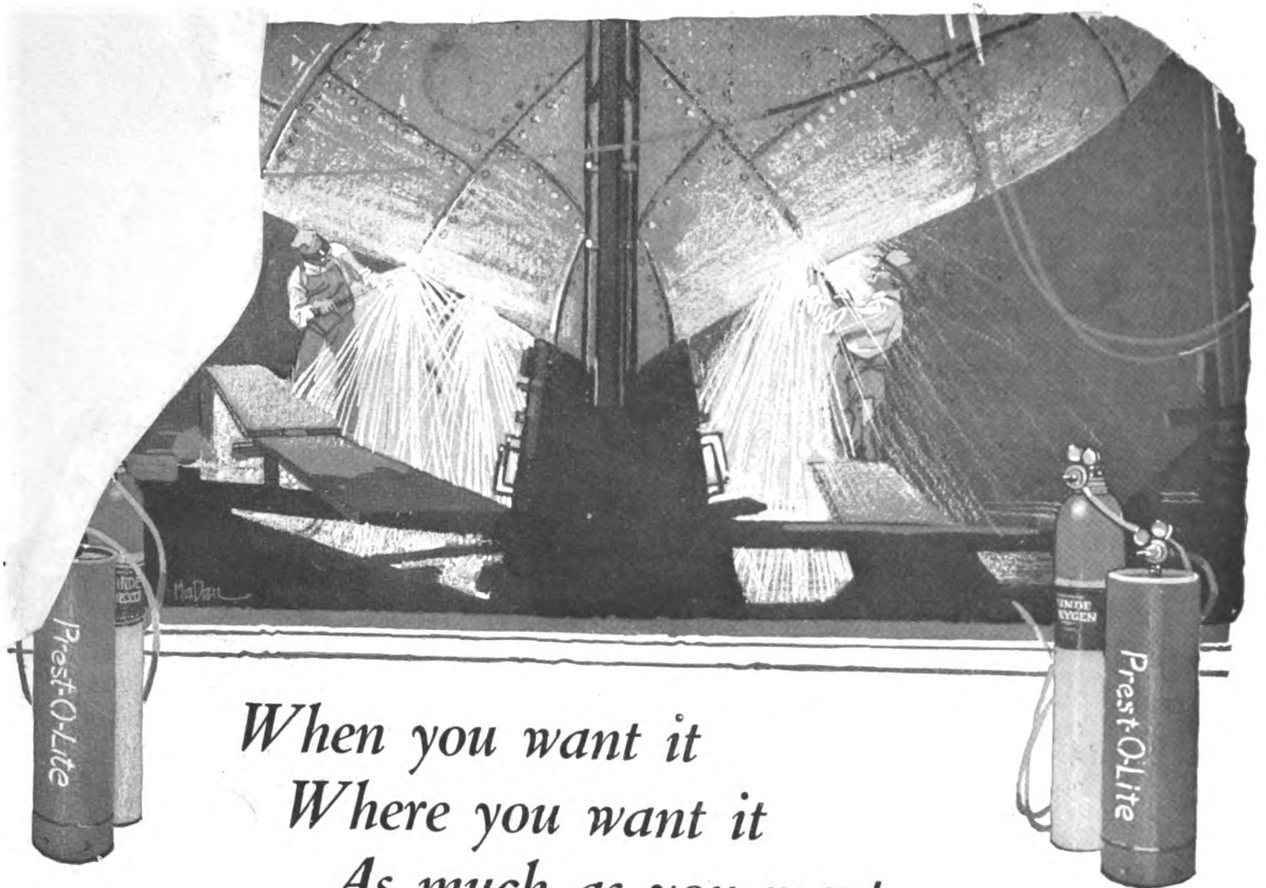

When you want it
Where you want it
As much as you want

PREST-O-LITE Dissolved Acetylene and Prest-O-Lite Service have made the oxy-acetylene process indispensable in ship-yards.

Prest-O-Lite
DISSOLVED ACETYLENE

provides ship builders with the purest cutting and welding gas in easily portable, instantly accessible and highly convenient cylinders.

Without such a supply of uniformly high grade gas always at hand, cutters and welders would find impossible many applications of the oxy-acetylene process now in common use.

And Prest-O-Lite Service, operating through forty plants and warehouses, places Prest-O-Lite Dissolved Acetylene at the command of ship-yards anywhere, at any time and in any desired quantity.

THE PREST-O-LITE COMPANY, Inc.

General Offices: Carbide and Carbon Building, 30 East 42nd Street, New York

Balfour Building, San Francisco

In Canada: Prest-O-Lite Co. of Canada, Limited, Toronto

PW-513-21

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Engineering Library

MARCH, 1922

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Marine Engineering and Shipping Age

American

LIT-O-SIL-O

Decking

620,502 sq. feet
installed on

SS American Legion SS Southern Cross

SS Wenatchee	SS Bay State	SS Nutmeg State
SS Lone Star State	SS Empire State	SS Golden State
SS Old North State	SS Creole State	SS Silver State
SS Panhandle State	SS Granite State	SS Hawkeye State
SS Wolverine State	SS Hoosier State	SS Buckeye State
SS Peninsular State	SS Keystone State	SS Palmettto State
SS Centennial State	SS Blue Hen State	SS Pine Tree State

Largest group installation of composition decking on record.

endorsed by

United States Shipping Board
New York Shipbuilding Corporation
Bethlehem Shipbuilding Corporation, Ltd.
Newport News Shipbuilding & Dry Dock Co.

An *American* decking backed by an *American* guarantee.
Do not confuse with foreign product of similar name.
American **LIT-O-SIL-O** *protects* deck plates from corrosion.

Booklet of proof and sample
of material on request.

MADESCO PRODUCTS
TRADE MARK REGISTERED

MARINE DECKING & SUPPLY CO.

MAIN OFFICE AND FACTORY
PHILADELPHIA, PA.

BRANCH OFFICE & WAREHOUSE
NEW YORK, N.

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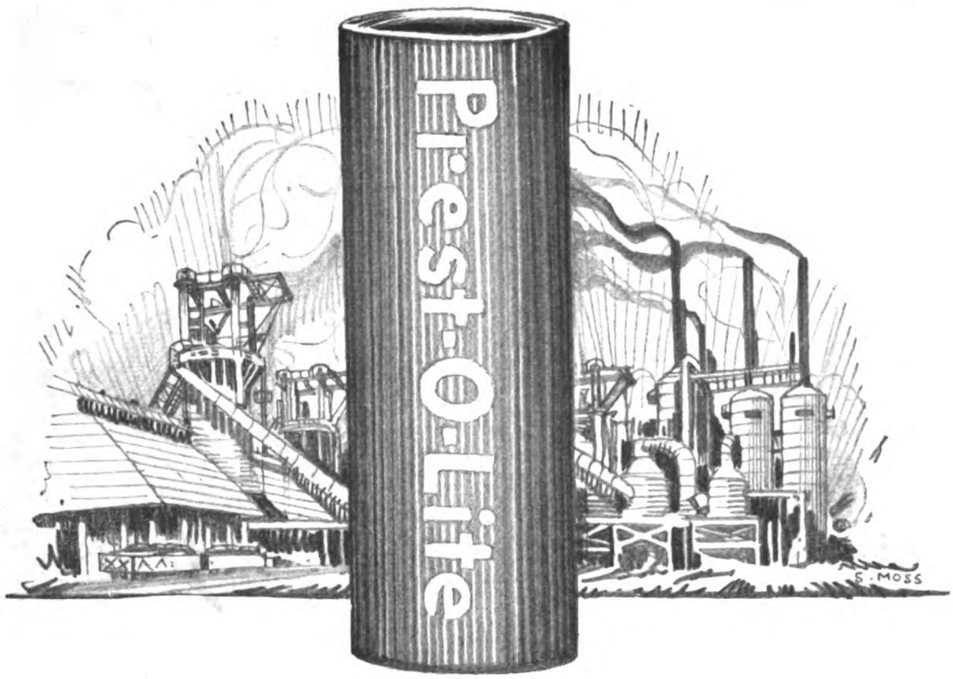

The Test of Time

In the years since Acetylene first became a commercial product, users of the gas welding and cutting process have been offered many substitute fuel gases. Unwarranted claims for these substitutes have failed to stand the test of time and actual performance.

PREST-O-LITE

Dissolved Acetylene Service, from a small beginning, has grown until it spans the continent. New distributing stations are constantly being established.

This growth results from a product and service that have been the logical answers to the steadily growing demand for a supply of fuel gas in portable form that is at once safe, convenient, economical and dependable.

An inquiry to our nearest District Sales Office will bring you information about our latest sales and service plans.

Each Prest-O-Lite user looks to his nearest District Sales Office not merely for arrangements to adequately cover Acetylene needs, but for helpful co-operation and advice on any matter involved in the use of Acetylene.

THE PREST-O-LITE COMPANY, Inc.

General Offices: Carbide and Carbon Building, 30 East 42nd Street, New York
Balfour Building, San Francisco; In Canada: Prest-O-Lite Co. of Canada, Toronto

DISTRICT SALES OFFICES

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Prest-O-Lite
DISSOLVED ACETYLENE

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APRIL, 1922

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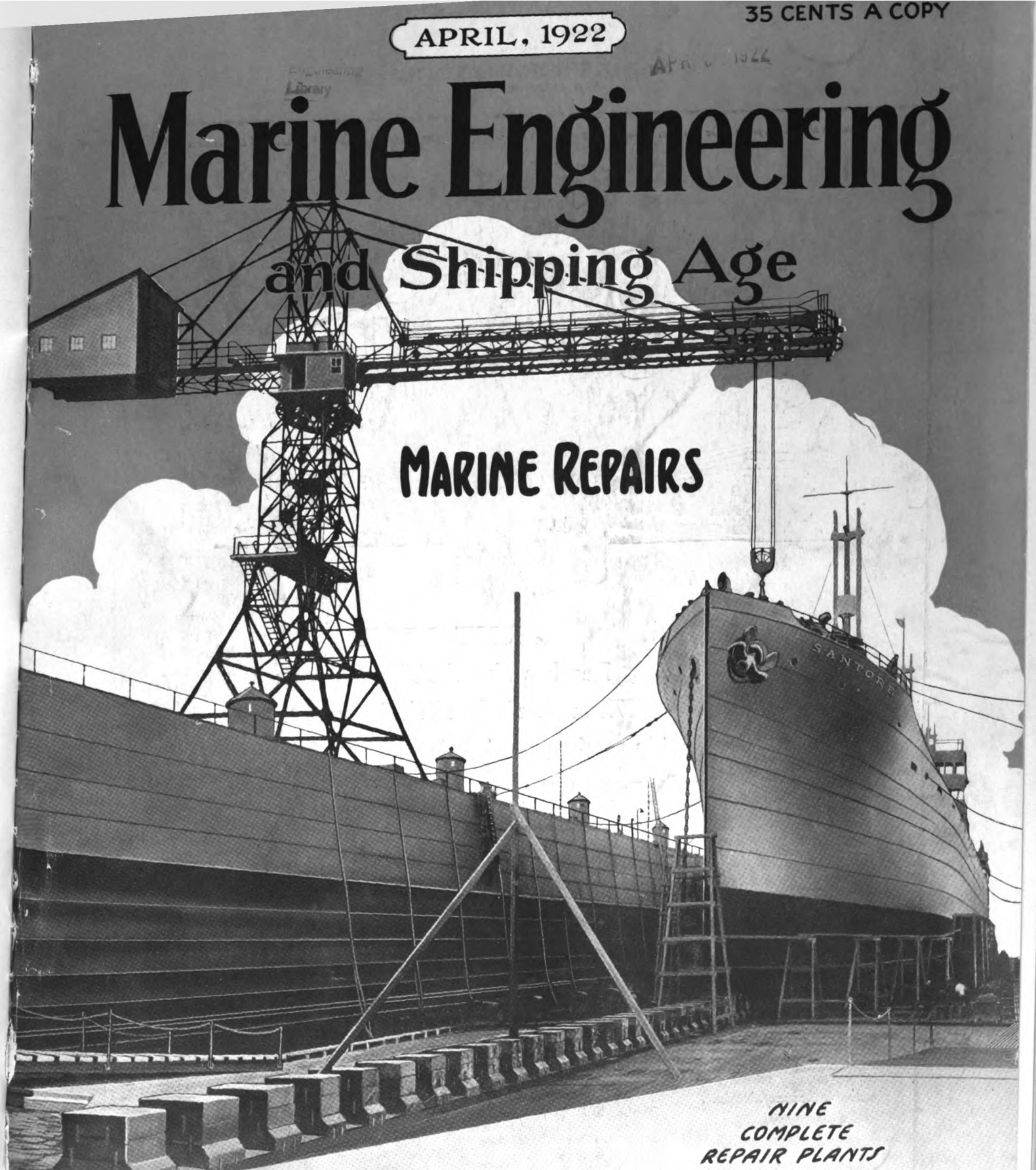
Engineering Library

APR 1922

Marine Engineering and Shipping Age



NINE
COMPLETE
REPAIR PLANTS

BETHLEHEM

BETHLEHEM SHIPBUILDING CORPORATION, LTD., BETHLEHEM, PA.
GENERAL SALES OFFICES: NEW YORK CITY.

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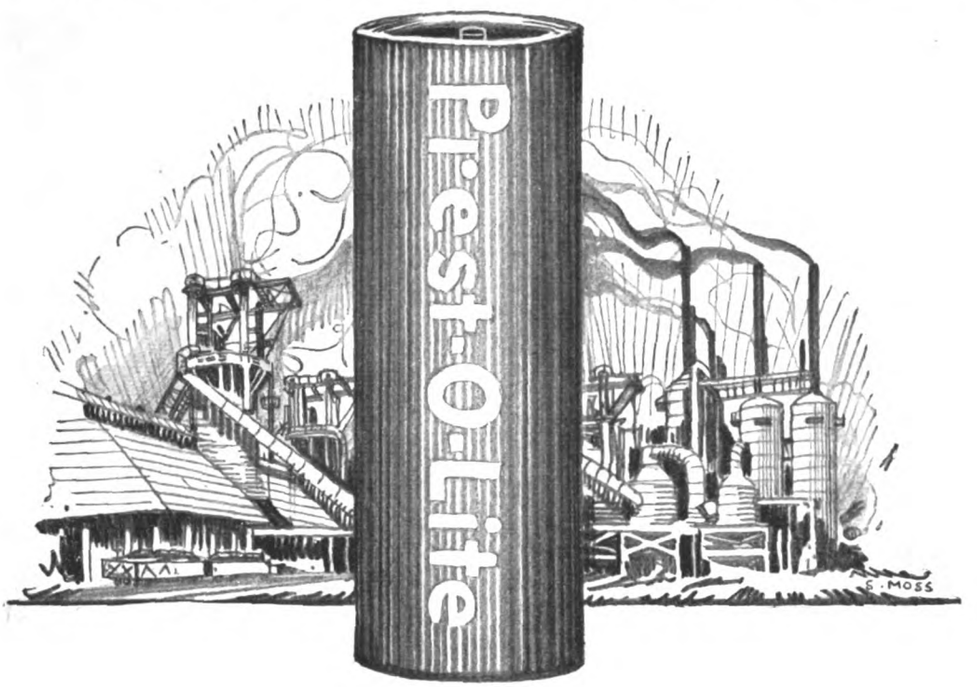

PREST-O-LITE
Reaches You As You Want It
When You Want It Without Delay

The manufacturing and distributing system of Prest-O-Lite embraces forty-eight plants and warehouses placed with a view to meeting every possible requirement from any part of the country without loss of time.

Normally you are supplied with Prest-O-Lite from the plant or warehouse nearest you. If, however, circumstances require, your orders are filled from another plant or warehouse without delay and you pay only your normal freight. Any extra freightage is met by Prest-O-Lite as an integral part of Prest-O-Lite Service.

Prest-O-Lite users everywhere have enjoyed the benefit of this protection against shortage and delay.

An inquiry to our nearest District Sales Office will bring you information about our latest sales and service plans.

Each Prest-O-Lite user looks to his nearest District Sales Office not merely for arrangements to adequately cover acetylene needs, but for helpful co-operation and advice on any matter involved in the use of acetylene.

THE PREST-O-LITE COMPANY, Inc.

General Offices: Carbide and Carbon Building, 30 East 42nd Street, New York
Balfour Bldg., San Francisco; In Canada: Prest-O-Lite Co. of Canada, Ltd., Toronto

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Prest-O-Lite
DISSOLVED ACETYLENE

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Engineering Library

MAY 1922

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Marine Engineering

and Shipping Age

We Can Supply Any Valve or Fitting for Ship Use

1855 — CRANE CO. — 1922

Branches in 70 leading cities

836 South Michigan Avenue, Chicago

Works—Chicago and Bridgeport

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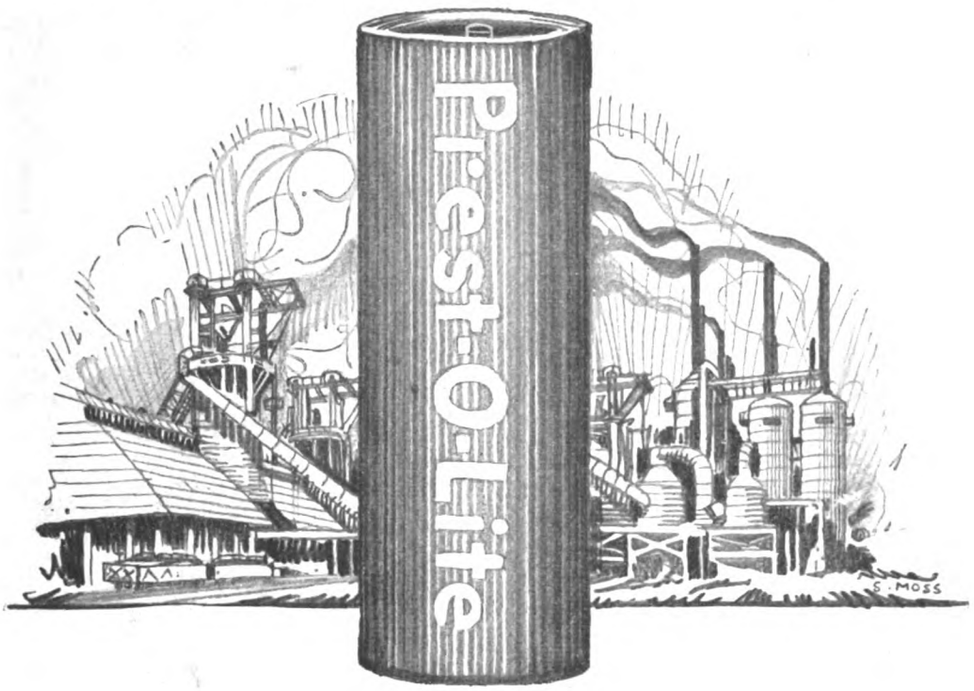

PREST-O-LITE

One Gas That Meets Every Requirement of Welders and Cutters

In spite of continuous effort to substitute other fuel gases, Acetylene remains today the *only practical welding gas* and by far the best for cutting.

Because it is so perfectly adapted to both welding and cutting, it does away with the necessity for two stocks of fuel gas and two types of apparatus for cutting and welding.

One supply of gas answers every demand. Operators using one fuel gas and one type of apparatus become more efficient and problems of management are simplified.

An inquiry to our nearest District Sales Office will bring you information about our latest sales and service plans.

Each Prest-O-Lite user looks to his nearest District Sales Office not merely for arrangements to adequately cover acetylene needs, but for helpful co-operation and advice on any matter involved in the use of acetylene.

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Engineering Library

JUNE 1922

JUN 13 1922

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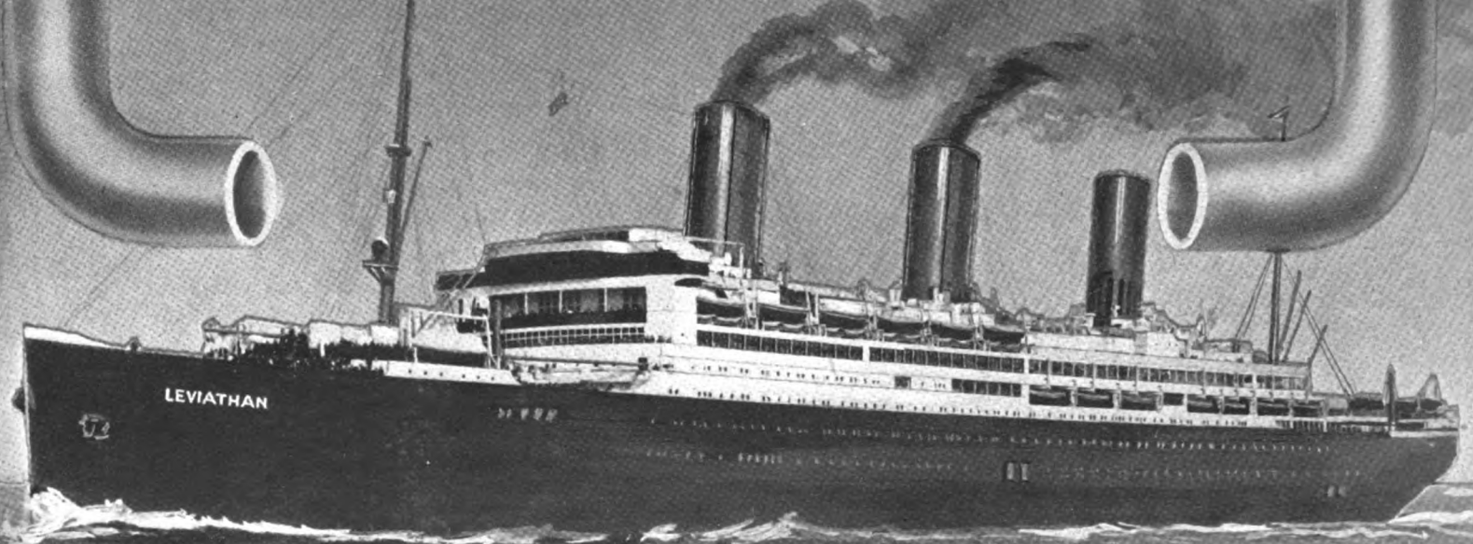
Marine Engineering and Shipping Age

"Chase" Products for the Leviathan

One-quarter million pounds of Chase copper tubing will be used by the Newport News Shipbuilding and Dry Dock Co. in reconditioning the flagship of America's Merchant Marine.

Specify "Chase"
BRASS COPPER BRONZE and NICKLE-SILVER
IN
ROD - WIRE - SHEET - TUBING



CHASE METAL WORKS

Waterbury New York Boston Philadelphia Rochester
Pittsburgh Chicago Cleveland Los Angeles San Francisco

PLANTS
CHASE METAL WORKS — Trade CHASE Mark — CHASE ROLLING MILLS

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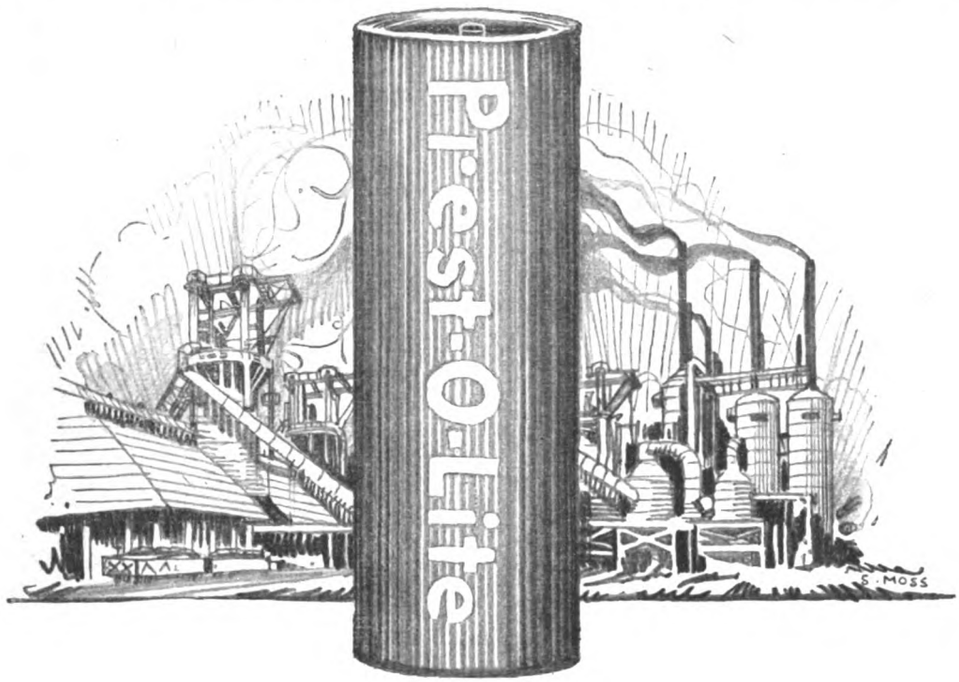

PREST-O-LITE

A Cylinder Which Meets Every Need

Prest-O-Lite Cylinders are designed to fit the widest range of individual needs.

For the small job or the one requiring extreme portability there is the easily handled 100 cubic foot capacity cylinder.

For the work calling for a large volume of gas there is the 300 cubic foot capacity cylinder.

Experience has shown that these two sizes fully answer every need of the user.

This convenience is one of the many details showing the care with which Prest-O-Lite studies consumer wants.

An inquiry to our nearest District Sales Office will bring you information about our latest sales and service plans.

Each Prest-O-Lite user looks to his nearest District Sales Office not merely for arrangements to adequately cover acetylene needs, but for helpful co-operation and advice on any matter involved in the use of acetylene.

THE PREST-O-LITE COMPANY, Inc.

General Offices: Carbide and Carbon Building, 30 East 42nd Street, New York
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Prest-O-Lite
DISSOLVED ACETYLENE

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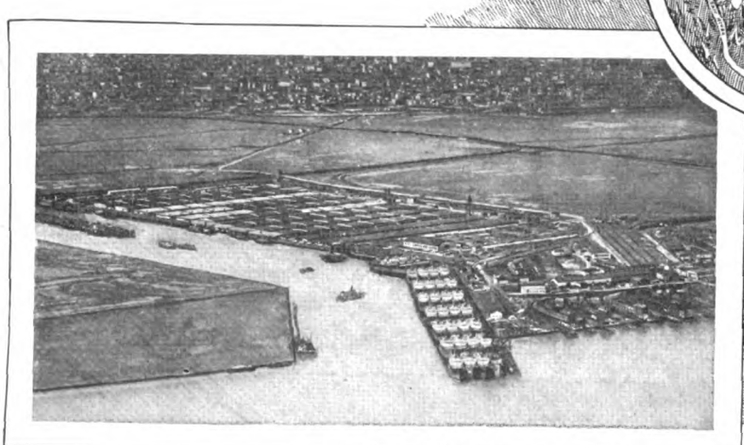
JULY, 1922

JUL 3 1922

Marine Engineering and Shipping Age

The only Rail-to-Ocean Steamship Terminal on the Atlantic Seaboard



PORT NEWARK

THE MIRACLE OF MODERN TIMES

LOADED freight cars can now be hauled by locomotive alongside ocean steamships at the Port of New York—at a point nearer to lower New York Bay than Manhattan Island is—alongside three great railroad classification yards—with switching connections with seven trunk line railroads serving all parts of the country south and west of New York—on deep water with a 7,000 foot inland ship canal, 650 feet wide.

Port Newark is the name of this sub-division of the Port of New York, the result of years of planning by the City of Newark, N. J. It is a terminal development that is correctly located and scientifically planned. Its location on the mainland, in New Jersey, the terminus of all except one of the railroads to the interior, effects big savings for shippers in time and expensive handling. And the land values are so much lower than elsewhere that the cost of warehouse space is far below the rates for other parts of the Port of New York.

The warehouses are equipped with loading and unloading platforms. The floors are at the loading level. Each fronts on the marginal dock. Railroad siding is on one side, paved roadway on the other. Warehouse space can be obtained in sections to meet any need. Two hundred industrial sites are available.

What are your needs now, or what do you expect them to be five or ten years from now? For full information write to

Thomas L. Raymond, *Director*

Department of Public Improvements, City Hall, Newark, N. J.

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PREST-O-LITE

Why Prest-O-Lite Makes Its Own Cylinders

Prest-O-Lite delivers to the user a product that is Prest-O-Lite through and through.

The cylinder is made in a Prest-O-Lite factory specially equipped for cylinder manufacture. Prest-O-Lite engineering skill and inspection control every step in production.

Making cylinders to its own design, guarding every step, Prest-O-Lite knows that each cylinder measures up to its high standard resulting from years of experience in the manufacture and distribution of Dissolved Acetylene.

An inquiry at our nearest sales office will bring you information concerning our latest sales and service plans.

Each Prest-O-Lite user looks to his nearest District Sales Office not merely for arrangements to adequately cover acetylene needs, but for helpful co-operation and advice on any matter involved in the use of acetylene.

THE PREST-O-LITE COMPANY, Inc.

General Offices: Carbide and Carbon Building, 30 East 42nd Street, New York
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Prest-O-Lite

DISSOLVED ACETYLENE

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Aug 1 1922 No. 8

AUGUST, 1922

Marine Engineering

and Shipping Age

W. A. FLETCHER AND CO.

Let our modern drydocks & repair service meet your emergencies

MAIN OFFICE HOBOKEN, N.J. ESTABLISHED 1853 TELEPHONE: HOBOKEN 312

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PREST-O-LITE

Adds Two New Links to its Chain

Prest-O-Lite is pleased to announce the opening of district sales offices at Baltimore and Kansas City.

These two new district offices are evidence of Prest-O-Lite's desire to place every facility within convenient reach of its customers.

An inquiry to our nearest sales office will bring you information concerning our latest sales and service plans.

THE PREST-O-LITE COMPANY, INC.

General Offices: Carbide and Carbon Building, 30 East 42nd Street, New York

Balfour Building, San Francisco; In Canada: Prest-O-Lite Company of Canada, Limited, Toronto

DISTRICT SALES OFFICES

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Prest-O-Lite

DISSOLVED ACETYLENE

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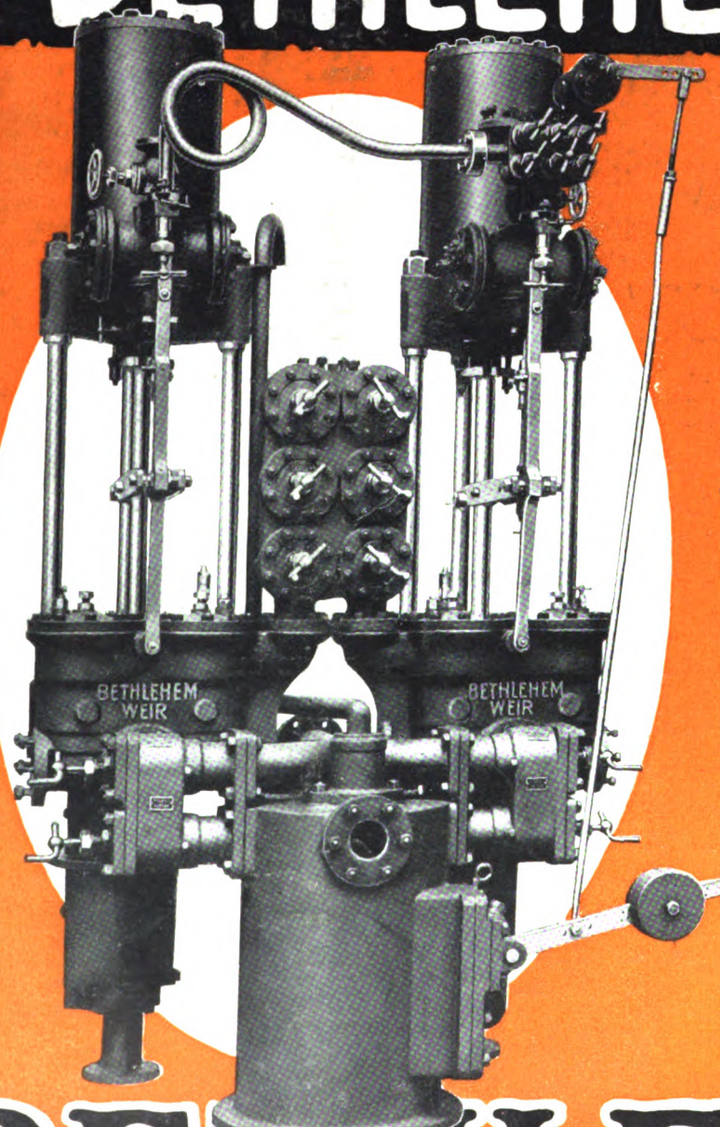
Navigating Library

SEPTEMBER, 1922

Marine Engineering

and Shipping Age

BETHLEHEM-WEIR



Marine Auxiliary Machinery for Economy and Reliability

BETHLEHEM SHIPBUILDING CORPORATION, Ltd.
BETHLEHEM, PA.
General Sales Offices: New York City

BETHLEHEM

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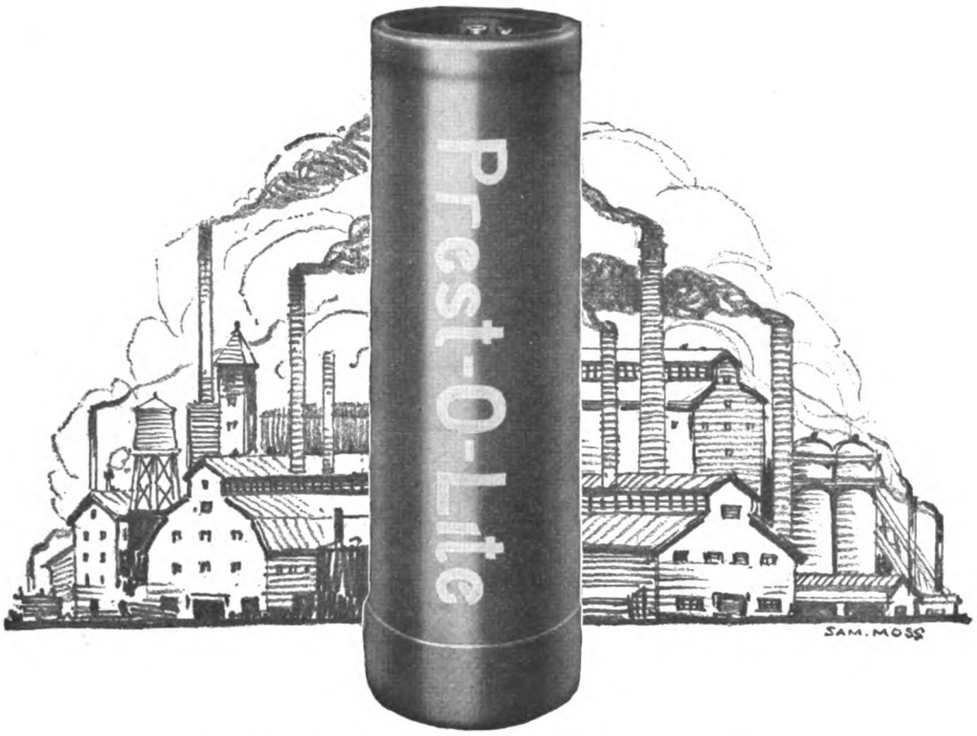

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Adds Two New Links to its Chain

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Prest-O-Lite
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OCTOBER, 1922

Marine Engineering and Shipping Age

PORT NEWARK

THE MIRACLE OF MODERN TIMES

Every manufacturer and shipper should investigate the economies and facilities of this terminal development. Now, more than ever before, will these savings enable a business to overcome competition.

At the gateway to America, in the midst of her teeming Metropolitan District—the richest market in the world—is Port Newark, the economically and scientifically planned rail-to-ocean steamship terminal and industrial center.

On the New Jersey mainland, where all except one of the railroads to the west and south of New York terminate, the port's own belt line railway shunts loaded cars to and from seven trunk line railroads out onto the docks alongside the steamships, in and out between the warehouses and the factory sites.

Three railroad classification yards are nearby. Three heavy duty roadways bring New York within twenty minutes by truck, Newark within ten minutes.

Port Newark is nearer Lower New York Bay than Manhattan Island is. Port Newark has lower rentals than any other part of the Port of New York on deep water and is easily accessible. There is no lighterage necessary at Port Newark. Freight for export enjoys the same rate to Port Newark as to New York City.

The labor supply of the Metropolitan District is plentiful and diversified. One of the nation's largest fuel reserves is nearby. Car lines and busses connect Port Newark with all parts of Newark and its numerous suburbs, where workers can live comfortably and economically.

Find out more about Port Newark.

Thomas L. Raymond, Director

DEPARTMENT OF PUBLIC IMPROVEMENTS, NEWARK, N. J.

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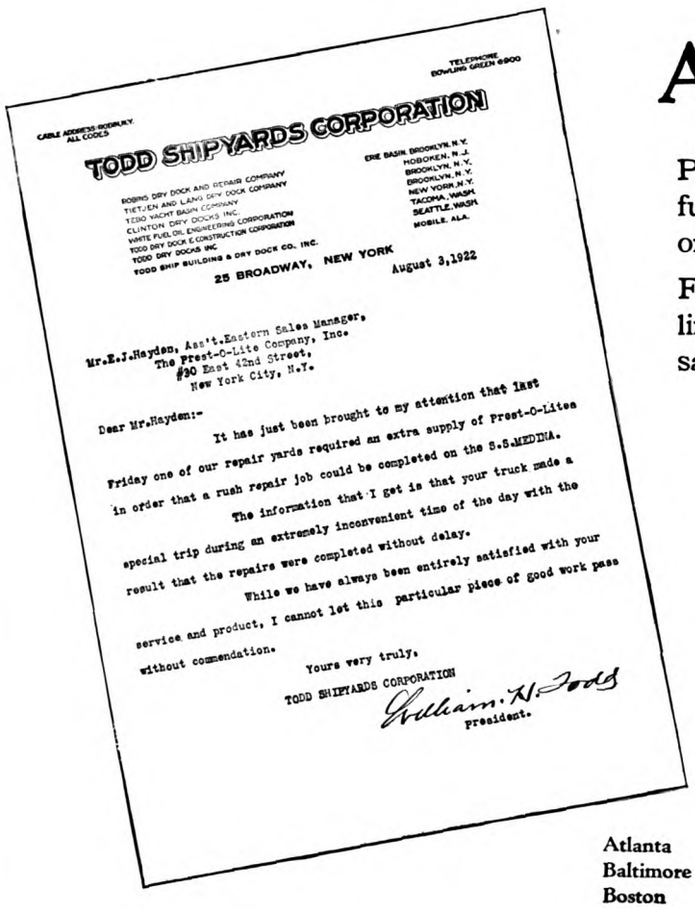

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CABLE ADDRESS: RODRUNLY. ALL CODES

TODD SHIPYARDS CORPORATION

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TODD DRY DOCK & CONSTRUCTION CORPORATION
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TODD SHIP BUILDING & DRY DOCK CO. INC.

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TACOMA, WASH.
SEATTLE, WASH.
MOBILE, ALA.

25 BROADWAY, NEW YORK

August 3,1922

Mr.E.J.Hayden, Ass't.Eastern Sales Manager,
The Prest-O-Lite Company, Inc.
#30 East 42nd Street,
New York City, N.Y.

Dear Mr.Hayden:-

It has just been brought to my attention that last Friday one of our repair yards required an extra supply of Prest-O-Lites in order that a rush repair job could be completed on the S.S.MEDINA.

The information that I get is that your truck made a special trip during an extremely inconvenient time of the day with the result that the repairs were completed without delay.

While we have always been entirely satisfied with your service and product, I cannot let this particular piece of good work pass without commendation.

Yours very truly,

TODD SHIPYARDS CORPORATION

William H. Todd
President.

A RUSH JOB

Prest-O-Lite's unrivalled service fully cares for the steady demand or the emergency need.

Fifty-four plants and warehouses, linked together, provide the necessary flexibility.

Each Prest-O-Lite user looks, to his nearest District Sales Office, not merely for arrangements to adequately cover acetylene needs, but for helpful co-operation and advice on any matter involved in the use of acetylene.

Prest-O-Lite

DISSOLVED ACETYLENE

DISTRICT SALES OFFICES

Atlanta	Buffalo	Dallas	Milwaukee	Pittsburgh
Baltimore	Chicago	Detroit	New York	St. Louis
Boston	Cleveland	Kansas City	Philadelphia	San Francisco

THE PREST-O-LITE COMPANY, INC.

General Offices: Carbide and Carbon Building, 30 East 42nd Street, New York

Balfour Building, San Francisco; In Canada: Prest-O-Lite Company of Canada, Limited, Toronto

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Engineering Library
NOV 6 1922

NOVEMBE

Marine Eng
and Shippi

S. S. "M. F. ELLIOTT" OF THE STANDARD OIL CO. OF NEW JERSEY. FITTED THROUGHOUT WITH CRANE EQUIPMENT

COMPLETE SERVICE FOR SHIP BUILDERS

Crane marine valves, fittings and steam specialties conform to the standards set by the leading inspection bureaus of every nation. Every unit is produced according to approved principles.

Crane service provides valves, fittings, steam specialties and piping for every standard marine application and special equipment to meet any individual requirement. Crane branch houses afford complete stocks of standardized units at convenient locations.

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CRANE EXPORT CORPORATION: NEW YORK, SAN FRANCISCO
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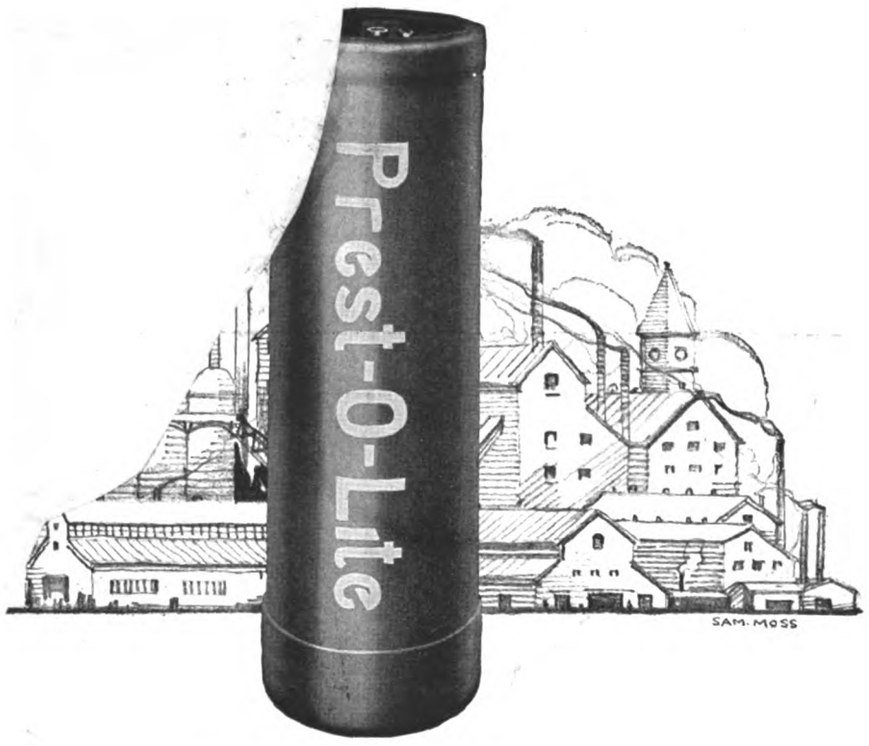

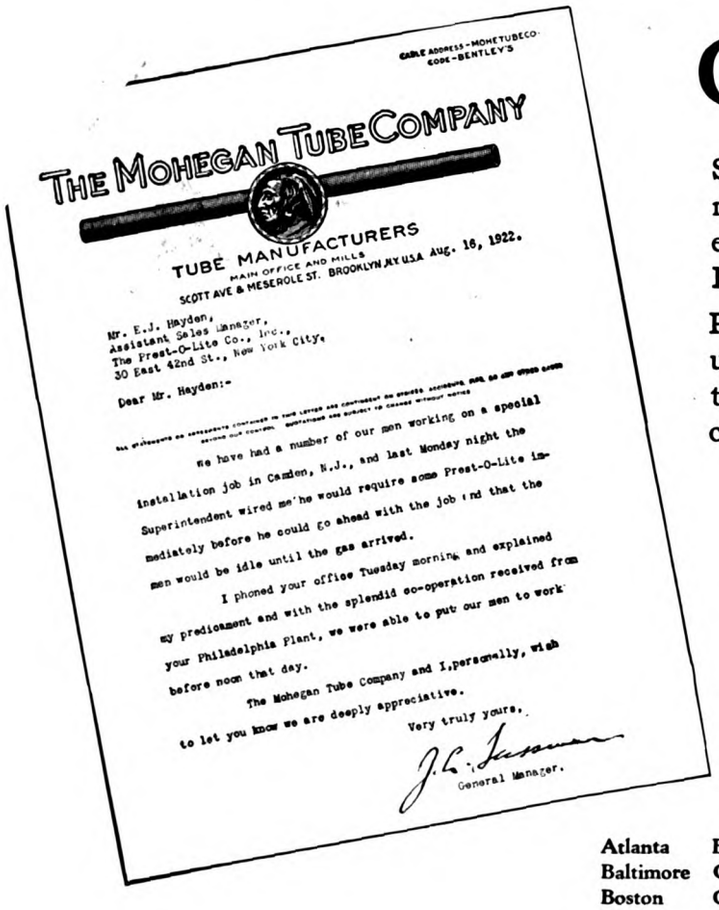

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THE MOHEGAN TUBE COMPANY

TUBE MANUFACTURERS
MAIN OFFICE AND MILLS
SCOTT AVE & MESEROLE ST. BROOKLYN, N.Y. U.S.A. Aug. 18, 1922.

Mr. E.J. Hayden,
Assistant Sales Manager,
The Prest-O-Lite Co., Inc.,
30 East 42nd St., New York City.

Dear Mr. Hayden:-

We have had a number of our men working on a special installation job in Camden, N.J., and last Monday night the Superintendent wired me he would require some Prest-O-Lite immediately before he could go ahead with the job and that the men would be idle until the gas arrived.

I phoned your office Tuesday morning and explained my predicament and with the splendid co-operation received from your Philadelphia Plant, we were able to put our men to work before noon that day.

The Mohegan Tube Company and I, personally, wish to let you know we are deeply appreciative.

Very truly yours,

J.G. Jansen
General Manager.

Cutting Costs

Service which meets emergencies reduces cost. Idle time of men and equipment is cut to a minimum. Frequently there is no interruption.

Prest-O-Lite's service can be relied upon at all times. That is why thousands of users throughout the country depend on Prest-O-Lite.

Each Prest-O-Lite user looks to his nearest District Sales Office, not merely for arrangements to adequately cover acetylene needs, but for helpful co-operation and advice on any matter involved in the use of acetylene.

Prest-O-Lite

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Boston	Cleveland	Kansas City	Philadelphia	San Francisco

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Engineering Library

DECEMBER, 1922

Marine Engineering

and Shipping Age

The new Marine Valve for 225 pounds pressure

Jenkins Valves

SINCE 1864

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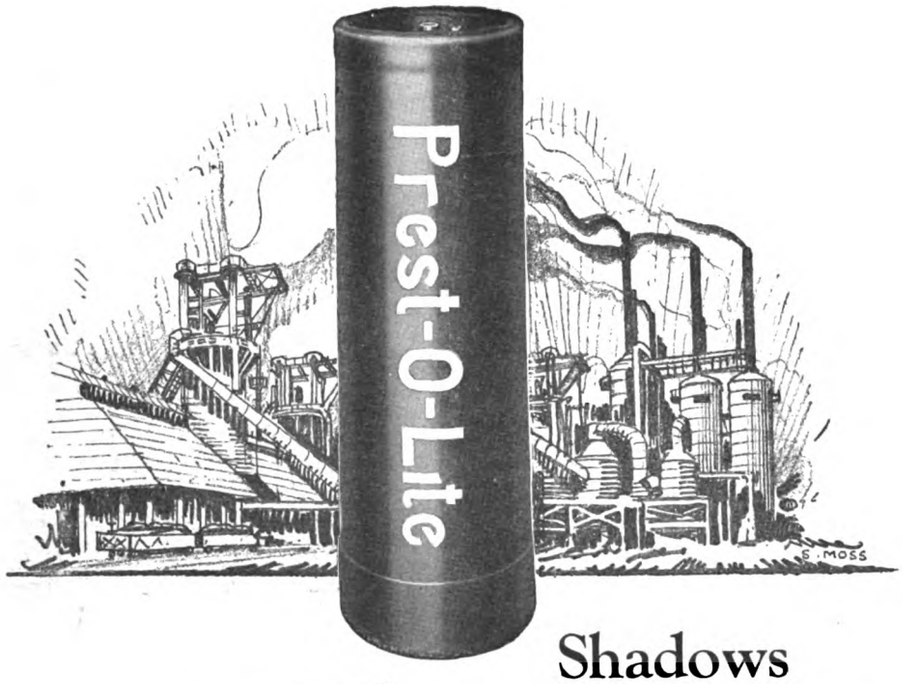

ROCHESTER GAS AND ELECTRIC CORPORATION
ROCHESTER, N.Y.

September 20, 1922.

W. F. Reich, Jr. Dist. Sales Mgr.
The Prest-O-Lite Co.,
1007 White Bldg.
Buffalo, N. Y.

Dear Mr. Reich:-

Sometime ago an unforeseen shortage of Prest-O-Lite necessitated our communicating with your office via. long distance telephone about 5:00 P.M. one evening with the result that delivery was made to our yard the next morning.

Recently this emergency was repeated and we again telephoned your office. Although this call was made late in the afternoon your prompt action in getting a shipment of Prest-O-Lite started to Rochester the same evening prevented a possible delay in our yard operations.

Service of this character is worthy of commendation and we assure you it is appreciated.

Yours very truly,
ROCHESTER GAS & ELECTRIC CORPORATION
Purchasing Agent.

E. R. Crofts/L

Shadows of Coming Events

The cutting and welding torch is regularly called away from its routine tasks to bridge over an emergency breakdown.

Years of experience have taught Prest-O-Lite that satisfactory service must anticipate unexpected gas needs on such occasions. Hence Prest-O-Lite service, built to satisfy the user's needs, rarely fails to have foreseen the emergency.

Each Prest-O-Lite user looks to his nearest District Sales Office, not merely for arrangements to adequately cover acetylene needs, but for helpful co-operation and advice on any matter involved in the use of acetylene.

Prest-O-Lite
DISSOLVED ACETYLENE

DISTRICT SALES OFFICES

Atlanta	Buffalo	Dallas	Milwaukee	Pittsburgh
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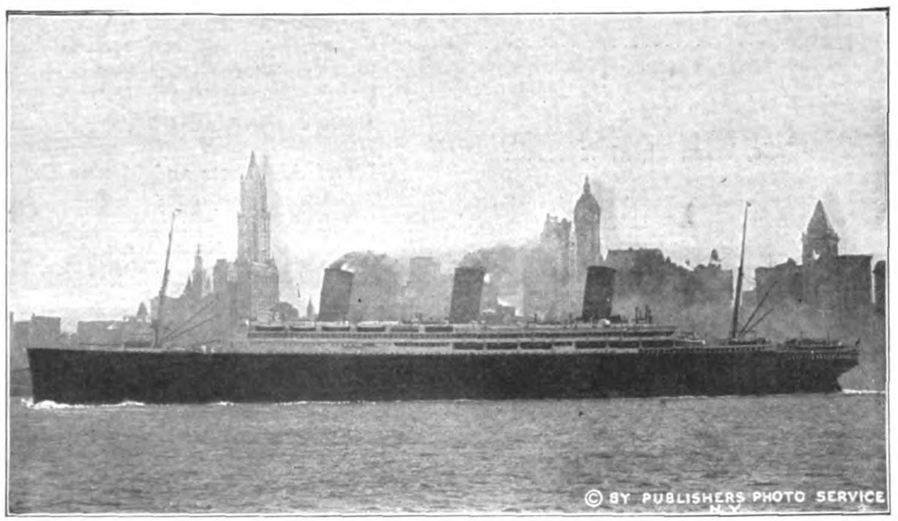
BRASS



LEVIATHAN

Specifies Chase Tubing

Whether it be copper tubing for the Leviathan, or bronze condenser tubes for the U. S. Navy, or brass pipe for the Woolworth Building you will find that Chase tubing—"made by an experienced mill; checked by a competent laboratory," is being specified.

260,000 lbs. of Chase copper tubing is being used in refitting the Leviathan for the American Merchant Marine.

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Division of Chase Companies Inc

WATERBURY CONNECTICUT

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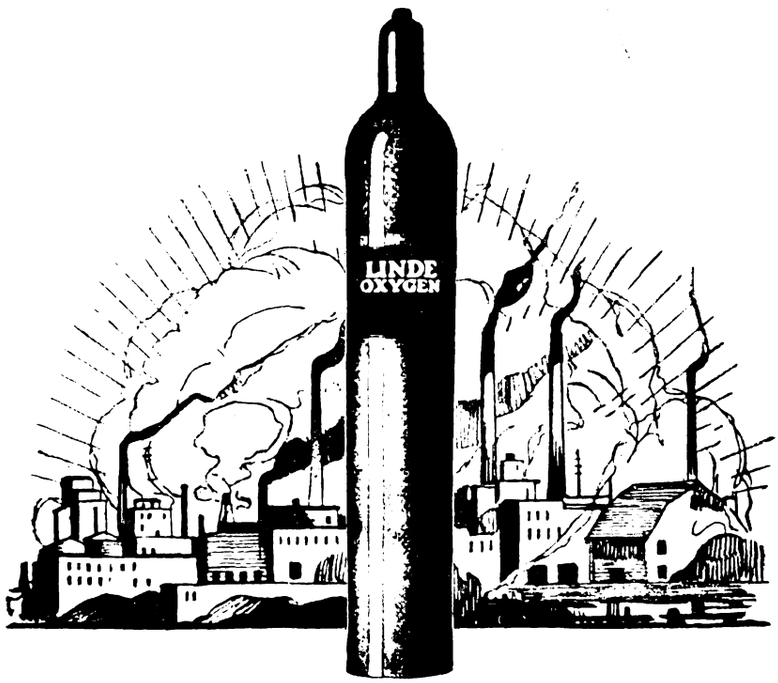

A message to every Linde Oxygen user

The Linde Company wishes to sincerely thank its patrons for the splendid spirit of helpfulness with which they have met our efforts during the past year to make Linde service of greater value than ever before.

And we pledge every man in the whole Linde organization to the task of showing day by day that we fully appreciate the obligation which the confidence and friendship of our patrons impose upon us.

For Your Convenience

Thirty plants—fifty-six warehouses

At Your Service

District Sales Offices in the following cities:—

ATLANTA	CHICAGO	KANSAS CITY	PHILADELPHIA
BALTIMORE	CLEVELAND	LOS ANGELES	PITTSBURG
BOSTON	DALLAS	MILWAUKEE	SAN FRANCISCO
BUFFALO	DETROIT	NEW YORK	SEATTLE
		ST. LOUIS	

THE LINDE AIR PRODUCTS COMPANY

Carbide and Carbon Building, 30 East 42nd Street, New York City

Balfour Building, San Francisco

THE LARGEST PRODUCER OF OXYGEN IN THE WORLD

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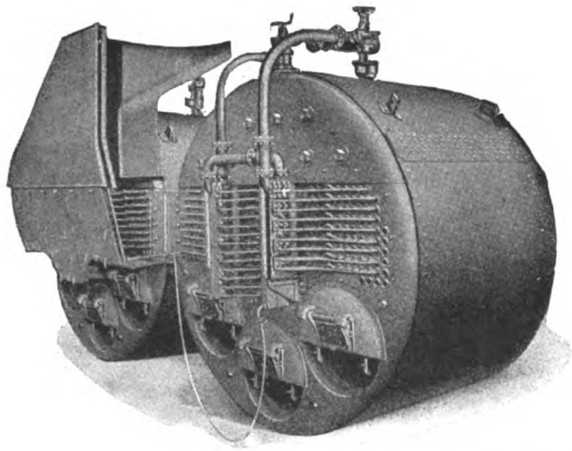

How you can make Four Boilers do the work of Five

A BATTERY of four Todd Elesco Superheater Boilers replaces five boilers in which superheater equipment is not included.

That is not a guess. It's a fact. We figure it on that basis when an owner gets tired of wasting one-fifth of all his coal and orders Superheaters installed while his ship's in port.

Get these figures. The saving in coal runs better than 10% for quadruple expansion engines, 12% for triple expansion engines, and 18% in compound engines using Todd Elesco Superheater equipment, as against the cylinder condensation losses which go with the old-fashioned use of saturated steam.

There are close to 3000 vessels equipped with *Todd Elesco Type Superheaters*—so our figures are based on a tonnage of over 3½ million indicated horse power.

With Todd Elesco Superheaters on oil burners you get such figures as .913 lbs. of oil per I.H.P. hour (S.S. Eastern Ocean); .921 lbs. of oil I.H.P. hour (Eastern Cloud); 11 knots per hour on 220 lbs. of oil in 24 hours (S.S. Robin Adair), and so on.

Todd Shipyards are in business to increase the efficiency of American shipping. This is one of our several economy gaining steam specialties.

If you want to know how to get more space for revenue cargoes, how to cut your coal bill about 20%, how to make four boilers do the work of five—ask us to send you full data on Todd Elesco Superheaters.

TODD
NEW YORK, U.S.A.

TODD ELESCO SUPERHEATERS

Licensed by The Superheater Company under Schmidt and other Patents

TODD SHIPYARDS CORPORATION 25 Broadway, New York

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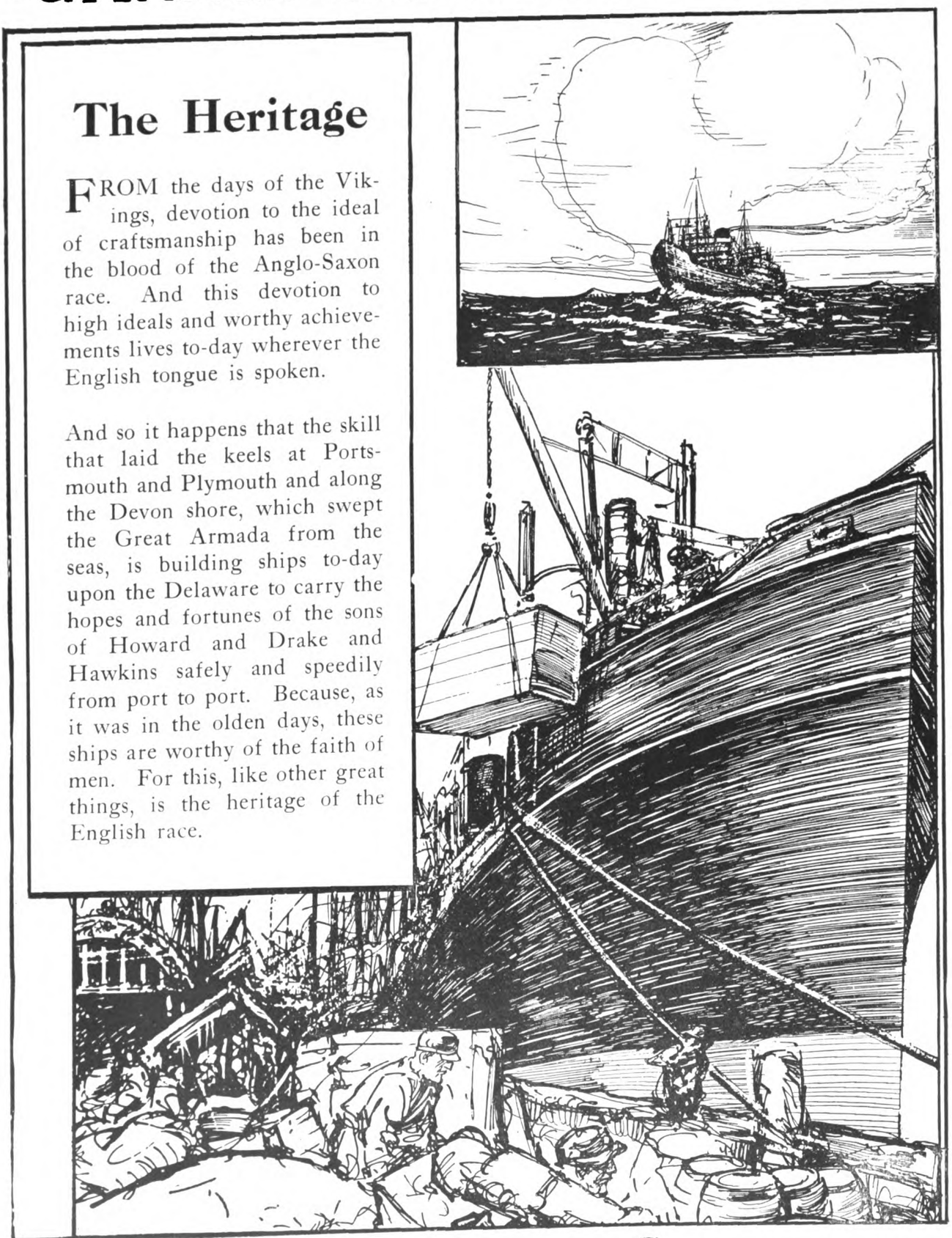
▫CHARACTER▫CRAFTSMANSHIP▫SERVICE▫

The Heritage

FROM the days of the Vikings, devotion to the ideal of craftsmanship has been in the blood of the Anglo-Saxon race. And this devotion to high ideals and worthy achievements lives to-day wherever the English tongue is spoken.

And so it happens that the skill that laid the keels at Portsmouth and Plymouth and along the Devon shore, which swept the Great Armada from the seas, is building ships to-day upon the Delaware to carry the hopes and fortunes of the sons of Howard and Drake and Hawkins safely and speedily from port to port. Because, as it was in the olden days, these ships are worthy of the faith of men. For this, like other great things, is the heritage of the English race.



NEW YORK SHIPBUILDING CORPORATION

NEW YORK, N.Y. CAMDEN, N.J.

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PORT NEWARK

THE MIRACLE OF MODERN TIMES

Most shipping and factory centers have grown up without planning. We see evidence of this during normal times in port congestion, in shortage of storage and loading and unloading facilities.

We also see factories located on expensive land, or too far from primary markets, or inconvenient for employees to reach and often lacking proper railway connections.

Port Newark is a correctly and scientifically planned shipping terminal and industrial center. On the New Jersey mainland, a part of the Port of New York, it is nearer lower New York Bay than Manhattan Island is. Seven trunk line railroads connect with its belt line railroad.

At Port Newark rail-to-ocean steamship delivery becomes an actuality on the Atlantic seaboard. There is no lighterage necessary. The channel is 31 feet deep; and an inland ship canal 7,000 feet long and 650 feet wide will have a ship turning basin at its end.

Three railroad classification yards are nearby. Three heavy duty roadways connect with the Lincoln Highway and other main trucking thoroughfares. Newark is ten minutes away, and New York is reached in twenty minutes by truck.

Ten million people live within fifty miles of Port Newark, the biggest market in the world. Labor supply is plentiful and diversified, the labor population is over 200,000. Newark and its suburbs offer comfortable and economical housing for all classes of labor.

Land values are lower at Port Newark. The space you need, the shipping facilities you require are at Port Newark. What will your needs be within the next five years? Write

Thomas L. Raymond, *Director*

DEPARTMENT OF PUBLIC IMPROVEMENTS, NEWARK, N. J.

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FEUERHEERD PATENTS

"A ROTARY pump combining the advantages of the centrifugal and reciprocating types. Two rotors of simple and rugged construction, each supported on its own bearing, properly lubricated and remote from the liquid being pumped.

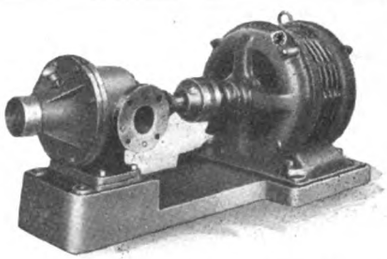
Rolling action between rotors minimizing wear, decreasing replacement and maintenance cost.

Straight line flow of liquid resulting in high efficiencies.

No eccentric action.

The Exeter pump is self-priming, direct, acting with uniform flow. It can be arranged to operate with any form of drive,—electric motor, vertical steam engine, turbine, gas or oil engine. In capacities up to 200 GPM it operates at speeds to allow for direct connection to motors, eliminating gears and resulting in compact silent running unit.

It is particularly adapted for marine use for the following services: Cargo pump on tankers, ballast, fire and bilge, fuel oil transfer, oil supply to burners, lubricating oil, fresh water and sanitary. Manufactured either in cast iron, all bronze, or bronze fitted."



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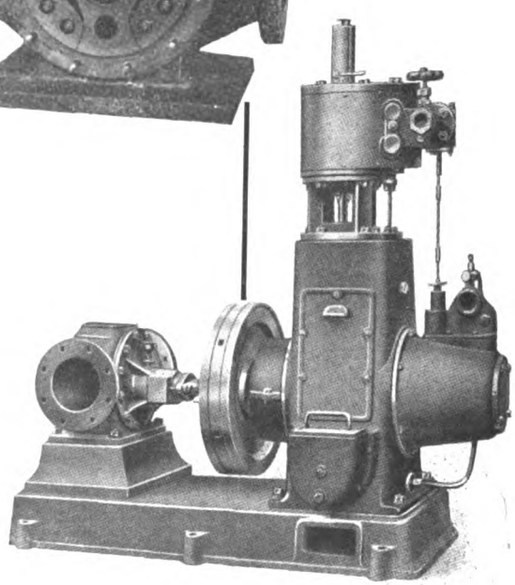
Directly Connected Motor Driven Exeter



Directly Connected Steam Driven Exeter

Exeter Machine Works, Inc.

Works & General Offices
West Pittston, Pennsylvania

hila. Off. Widener Bldg.

Chicago—Peoples Gas Bldg.

New York - Office 30 Church St.

113

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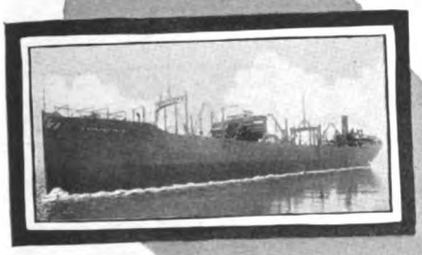
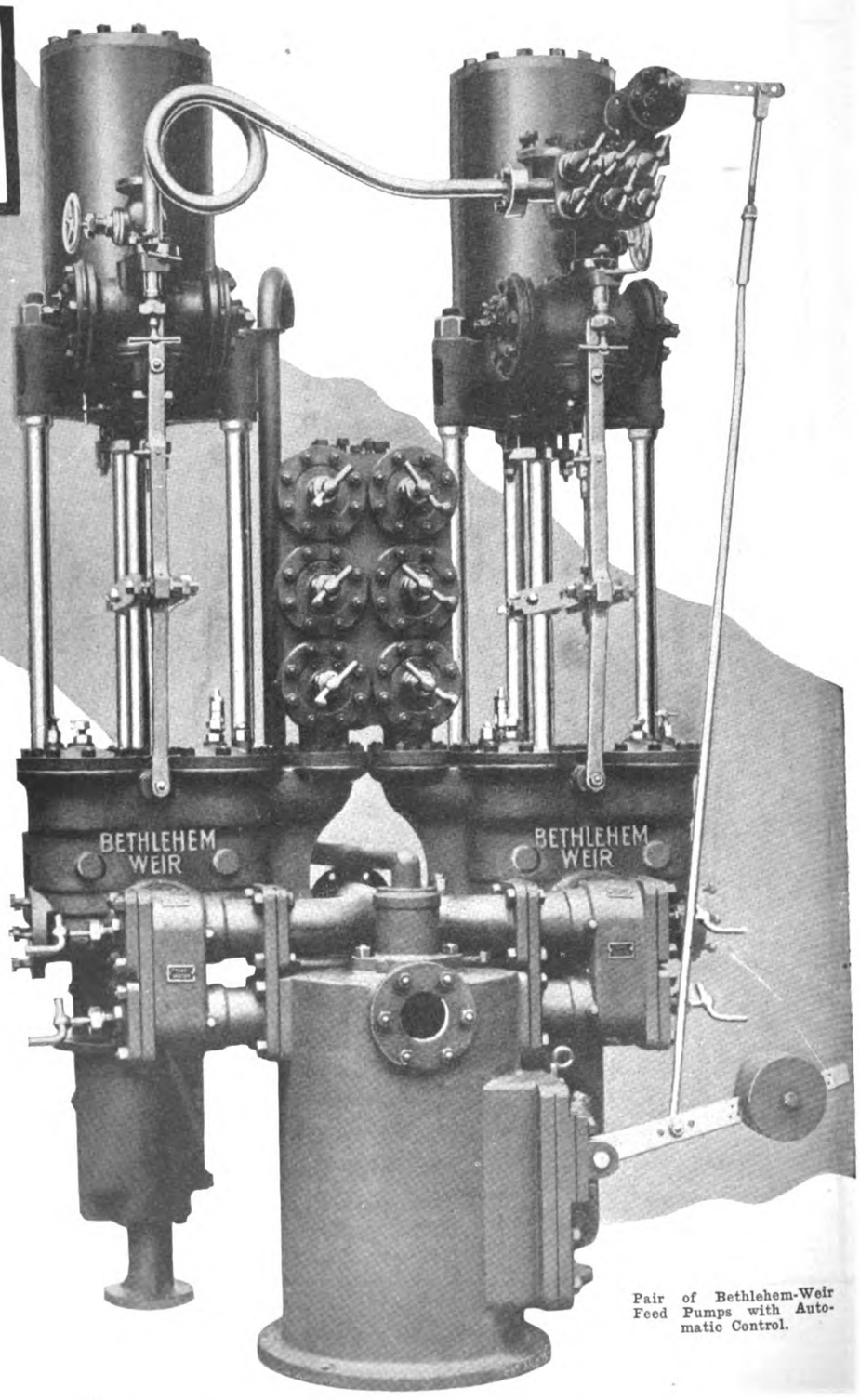
A Feed Pump



S. S. G. Harrison Smith 20,500-Ton Combination Ore and Oil Carrier. Equipped with Bethlehem-Weir Feed Pumps.



Pair of Bethlehem-Weir Feed Pumps with Automatic Control.

A Few of the Other Bethlehem-Weir Products

—each embodying the results of an unexcelled experience in handling marine auxiliary problems.

—each matching the Bethlehem-Weir Feed Pump for serviceability and reliability.

Bethlehem-Weir
Turbo-Feed Pumps

Bethlehem-Weir
Fuel Oil Pumps

Bethlehem-Weir
"Dual" and "Monotype" Air Pumps

Bethlehem-Weir
Uniflux Condensers

Bethlehem-Weir
Evaporators and Distillers

BETHLEHEM

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That You Can Trust

All machinery used on shipboard needs to be reliable; but in the case of a boiler feed pump, every other requirement is subordinate to reliability.

If the feed pump fails, the result is sure to be troublesome—perhaps disastrous. This is especially true with water tube boilers where a steady supply of water is necessary on account of the small quantity contained in the drums.

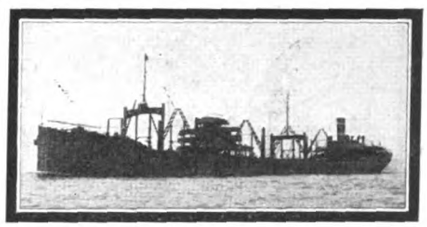
Absolute dependability at all times and under all conditions is the standard aimed at in the building of Bethlehem-Weir Feed Pumps.

Of course Bethlehem-Weir Pumps possess those other qualities an all-round satisfactory feed pump needs—economy in steam consumption—slow speed and quiet operation, preventing shocks in the feed pipe due to pressure surges—high mechanical efficiency—small floor space required.

But reliability comes first.

It is the year-in-year-out reliability of Bethlehem-Weir Feed Pumps that underlies their wide acceptance by marine engineers.

And the numerous installations in vessels of every type furnish some gauge of how successfully the Bethlehem-Weir Feed Pump meets all the requirements of service at sea.



S. S. Bethore 20,500-Ton Combination Ore and Oil Carrier. Equipped with Bethlehem-Weir Feed Pumps.

These Are the Advantages of Bethlehem-Weir Feed Pumps

1. They are designed to work at a moderate speed, thus insuring longer life and more satisfactory operation than pumps running at a high speed.

2. They operate quietly. The special type of steam valve causes the pumps to slow down toward the end of the stroke, and consequently the water valves settle quietly in their seats. This action of the valves also prevents any jar or shock in the feed pipes, as there is no sudden reversal of the piston.

3. The steam valve, a very important feature, is very simple in construction; it consists practically of only two moving parts, thus reducing wear and tear to a minimum.

4. The pumps are economical in steam consumption.

5. There is no dead center; the pumps will start at any part of the stroke. The length of stroke can be adjusted in a few minutes, and when once adjusted, it is constant at all varying speeds and pressures.

6. A large valve area with small lift is obtained by using a number of small valves in a circular seat.

7. A high mechanical efficiency is maintained, due to first-class workmanship, material and design.

8. A small amount of floor space is required, and the pumps are easy to install.

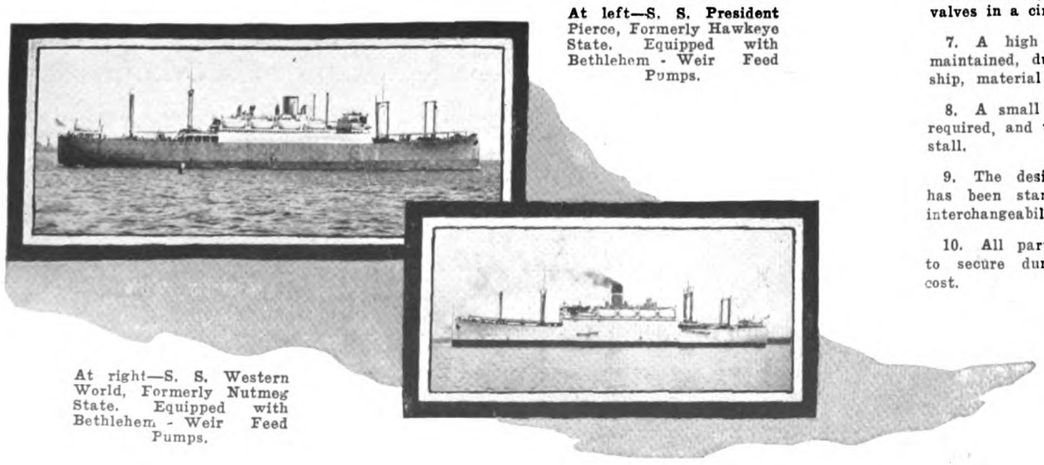
9. The design of the various parts has been standardized, thus providing interchangeability of parts.

10. All parts are so constructed as to secure durability and low upkeep cost.

BETHLEHEM SHIPBUILDING CORPORATION, LTD.
BETHLEHEM, PA.

General Sales Offices:
25 BROADWAY, NEW YORK CITY.

Sales Offices:
Boston Philadelphia Wilmington, Del. Baltimore San Francisco



At left—S. S. President Pierce, Formerly Hawkeye State. Equipped with Bethlehem - Weir Feed Pumps.

At right—S. S. Western World, Formerly Nutmeg State. Equipped with Bethlehem - Weir Feed Pumps.

-WEIR MARINE AUXILIARY MACHINERY

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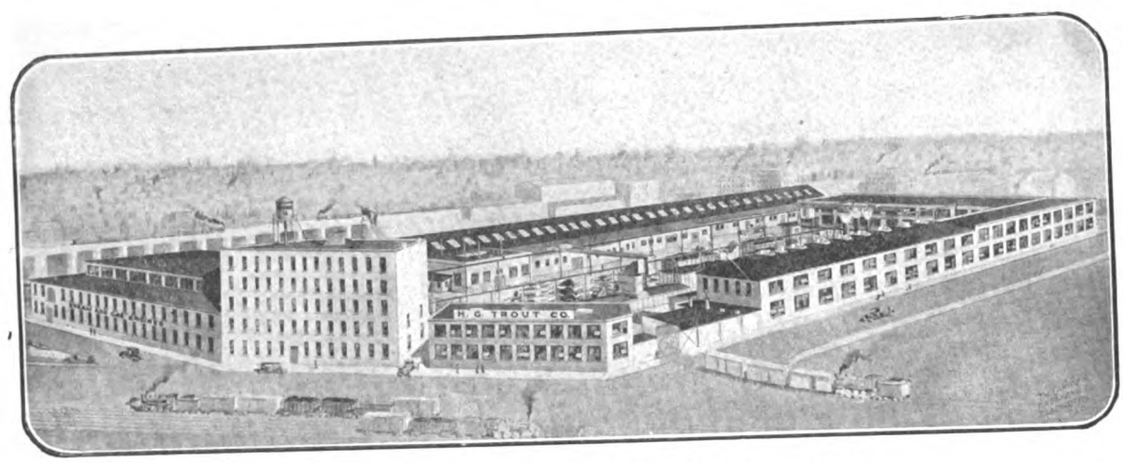
Announcing the New Product

THE TROUT

(Leissner System

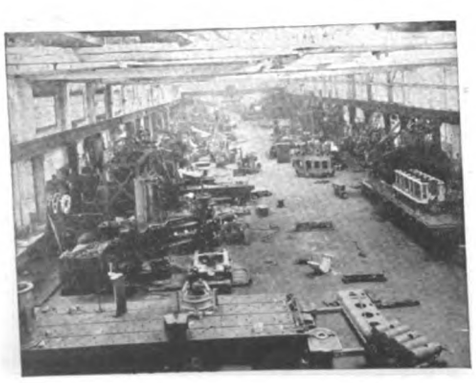


The Plant behind the TROUT DIESEL—Established 1848.

THE VALUE OF AGE

in an Engineering works lies, not alone in the wealth of experience available in its records, but also in the spirit of its men. Most of our officials and mechanics learned their trades here. Many of them represent the second or third generation of employees. These satisfied and loyal men take pride in upholding our traditions of quality and practical design.

"You receive these benefits when you deal with us."



View of Our Main Machine Shop

Write for further particulars to—

THE H. G. TROUT CO.

224-50 Ohio Street,
Buffalo, N. Y.

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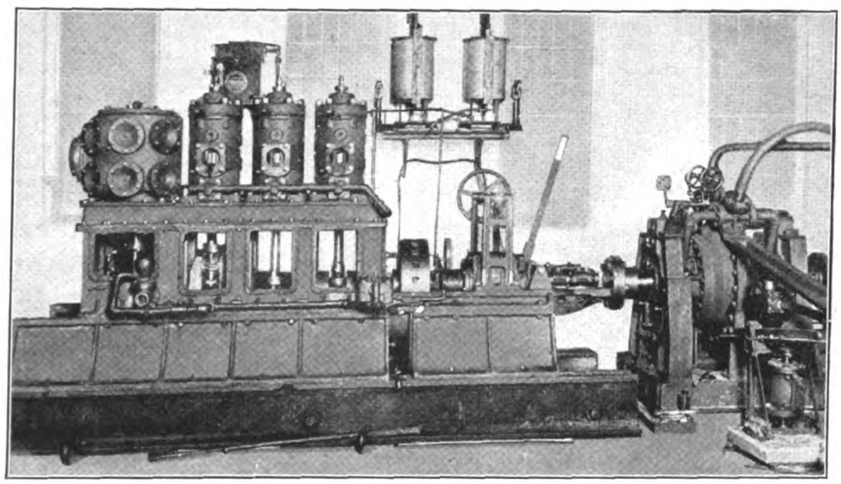
of an Old Marine Concern

DIESEL ENGINE

of Combustion)

TROUT
BUFFALO U.S.A.



The TROUT DIESEL, 75 to 500 B. H. P.
(Practically completed and ready for exhaustive tests)

Constant and close association with the Marine Field has demonstrated to us the ever increasing demand for the Oil Engine.

Our wide experience in Marine Steam Engine and Propeller manufacture, has emphasized certain essential features, which every operator of a marine engine, has found to be important.

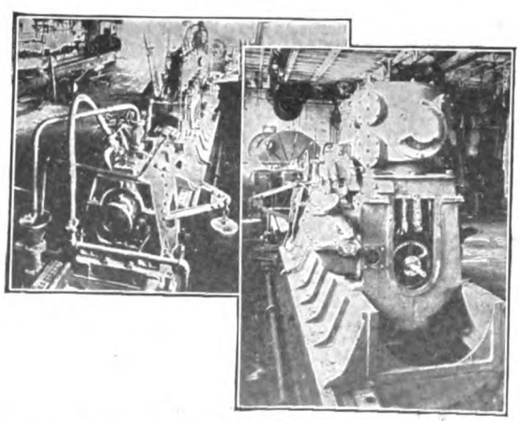
For several years we have been searching for the best combination of these features, to enable us to develop and place upon the market, an engine which would combine simplicity, accessibility, ruggedness and operating economy. We are confident that we can now offer such an engine,—heavy enough to withstand the hardest service, yet with no excessive weight—and no waste of space.

THE TROUT DIESEL ENGINE will uphold our reputation for building machinery, which will give uninterrupted service under the most severe conditions.

CONSTRUCTION FEATURES

Two stroke Cycle
Airless Injection
Scavenge Pump

Forced Feed Lubrication, thru hollow crankshaft
Cylinders lubricated by timed mechanical Lubrication.



Showing Engine in Course of Erection (Both Ends)

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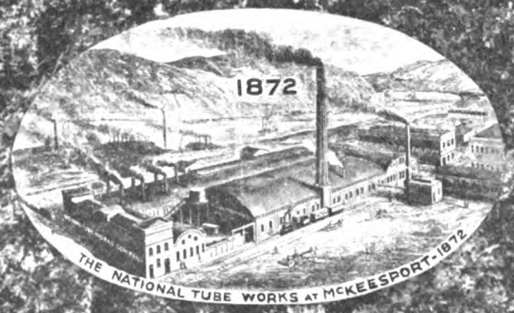
A Half Century

1922

NATIONAL WORKS, at McKeesport, Pennsylvania, one of the eleven plants of National Tube Company, recently observed its fiftieth birthday. This works had its inception in East Boston, Mass., in 1868, so that the history of "NATIONAL" Pipe now spans 54 years of active Pipe Progress.



TUBE WORKS MARKS 50 YEARS' EXISTENCE

Officials and Men Observe Anniversary of McKeesport Company.

VETERANS STILL ON JOB

Officials and veteran employes of the National Tube Company of McKeesport yesterday observed the

Plant Observes Fiftieth Anniversary

On Sept. 13, 1872, the first pipe was turned out at the McKeesport, Pa., plant of the National Tube Co., and last Wednesday, the fiftieth anniversary of that event was observed by officials and veteran employees. Among the latter were two who were employed at the plant at its opening and who still are in active harness, Daniel Turley and Patrick Bligh.

The first product of the plant was 2-in. boiler tubes. Now the range of products includes all kinds of tubular goods, of sizes running from ¼ in. to 30 in. in diameter. The original plant occupied only four acres and consisted of one small building. There are now scores of buildings, one of which is the largest mill under one roof in the world, while the plant as a whole is the largest

National Tube Co. Fifty Years at McKeesport

Largest Pipe Mill in the World Has Had Interesting History Marked by Progressive Management and Successful Operation

National Tube Co., Pittsburgh, manufacturer of the universally known "National" pipe, celebrated on September 13 the fiftieth anniversary of the opening of its big McKeesport plant. Executives of the company, veteran employes and citizens of the city of McKeesport made the day a memorable one. It is the proud boast of the community that fifty years ago the largest pipe mill in the world was located there, and that today it can still make the same claim.

It must be remembered that the history of the company antedates its connection with McKeesport, for in 1869 John H. and Henry K. Flagler

Pennsylvania, that the

cided to seek a

port

September 21, 1922

National Tube Observes Fiftieth Anniversary

The fiftieth anniversary of the making of pipe by the National Tube Co., McKeesport, Pa., was celebrated Sept. 13 by officials of the company and its veteran employes. Men who helped to make the first pipe are living and several of them

"Great Oaks From Little Acorns Grow"

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# of Pipe Progress

AFTER FIFTY YEARS existence—whether it is a man's personal life, a great political movement, a notable industry or invention, this seems a natural point at which to stand and look back over the accomplishments and failures of the half century, and to balance the realization of today against the struggles of the passing years.

From a modest beginning in 1872, with a small plant and a few acres of ground, the history of National Works of National Tube Company has been one of continual progress, until today it stands unrivaled in its position of leadership among plants manufacturing tubular goods. Keeping abreast of the times, keeping faith with the consumer, and with a desire to serve in an ever-increasing measure, is the keystone upon which the progress and growth of the plant has been made.

This anniversary has attracted editorial attention throughout the country, and as typical of such the following is quoted from the *Journal of Commerce*, Philadelphia, September 30, 1922.

"When one glances back over the pages of manufacturing and commercial pursuit during the past half century he will find much to interest him in the origin and inception of the leading concerns of the present day, for the onward and upward career of these enterprises in the majority of instances is merely the substantial fruit of success which usually comes to reward intelligent and energetic effort, no matter in what direction or in what capacity it may be applied.

Tracing the history of prominent and old established Pennsylvania enterprises it will be found that there is probably none which enjoys a wider prestige and reputation in its special line of activity than the National Works of National Tube Company located at McKeesport, Pa., which a few days ago had the pleasure and satisfaction of celebrating the 50th anniversary of its founding. It is one of the oldest concerns of the country and has developed to its present large proportions from a small beginning, but its growth and expansion have been consistent and gainful. The real secret of the continued success of the firm will be found in the fact that its management has always proven it is fully in touch with the progress and trend of the times, studiously striving to place upon the market a line of products that would sell themselves through the efforts of their own merits and qualities.

The people of McKeesport are naturally proud of the past record, present stability and future promise of the city's representative commercial and manufacturing enterprises; proud of that integrity of business dealing and consistency of energy of purpose which successfully meet the commercial rivalry and competition, because of known quality of product and reliability of service; proud of that up-to-date spirit of effort and endeavor which makes the success of the past the foundation upon which to build and plan for still greater achievements in the future, and in all of these essentials the National Tube Company is typical of that commercial energy and enterprise which won for the United States a position of leadership among the nations of the world."

The Pipe that for more than fifty years has been

The Recognized Standard of Wrought Pipe Quality

NATIONAL TUBE COMPANY, PITTSBURGH, PA.

General Sales Offices: Frick Building.

DISTRICT SALES OFFICES—

Atlanta Boston Chicago Denver Detroit New Orleans New York Salt Lake City Philadelphia Pittsburgh St. Louis St. Paul

PACIFIC COAST REPRESENTATIVES: U. S. Steel Products Company San Francisco Los Angeles Portland Seattle

EXPORT REPRESENTATIVES: U. S. Steel Products Company New York City

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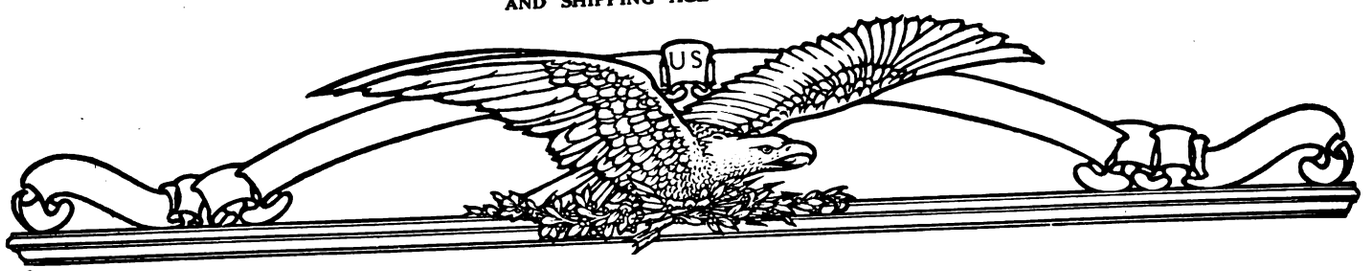

Marks are

At New Cumberland, Pa.
December 8

Harness, all kinds
Aparejos, cargo
Bags, saddle, grain, feed
Bits, bridoon, curb, rein
Saddle Blankets
Horse Covers
Bridles & Collars
Currycombs & Brushes
Halters & Ties
Traces & Straps
Saddles, various

At Columbus, Ohio
December 12

Motors, 5 to 50 h.p.
Lamp Shades, metallic
Transformers, G. E. & Mahoney
Terry Steam Turbine, 140 h.p.
Controllers, 220 volts
Boiler Tubes, 4″ test 1000 lbs.
Steel, bar, strip, sheet, cold & hot rolled
Grinding Wheels, various
Rivets, asstd.
Feed Bags, new
Jersey Gloves
Haversacks, various
Mittens, 1-finger lea.
Bees Wax & Clarified
Shoemaker's Thread, asstd.
Lasts, various
Table Cutlery
Stock Pots & Bake Pans
Boiling Plates
Razors, common
Shovels, intrenching
Cans, G. I., various
First Aid Packets
Cartridge Boxes
Hooks, asstd.
Stovepipe & Joints
Wagon Bows & Bottoms
Wood Feed Boxes
Driver's Seats
Wagon Sides & Tongues
Wheels, front & hind
Harness components
Collars
Halters

At Philadelphia
December 15

Rope, all kinds
Duck, various shades & wgts.
Gauntlet Gloves
Bobbinette, grey, 48 to 72″
Unbleached Braid
Convalescent Cloth, grey
Cap Cloth, O. D.
Puttee Cloth, O. D.
Melton, O. D., 8 to 28 oz.
Shirting, cot. & flan., O. D.
Thread, asstd.
Cutting Steels, all kinds
Sheared Tin, 22 gauge
Buckets, G. I., w. covers
National Cash Registers
Canned Fruits
Dental Cream
Cigars
Shoe Polish

WAR DEP

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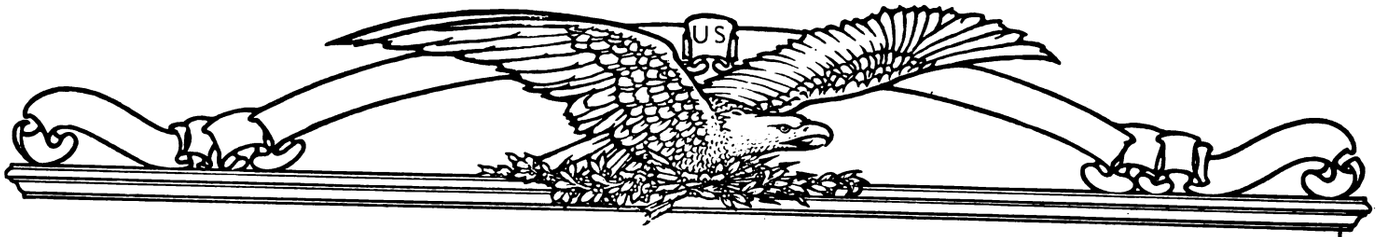

Easy Money

—When you use them in such cases as these

SOMEWHERE in these lists you are going to come upon a familiar word. Mark it! Use a red, black, blue or green pencil—but mark that word, and mark it so it sticks out like a lighthouse! That word is the name of something you use in your business, and behind it stands a vast quantity of goods that can be purchased at a vast saving in these three War Department auctions.

Careful search through these lists will reveal many such words—each and every one packed full of profit opportunities for you. Mark them all! Take as much time as you need to comb the lists thoroughly! The busier you are, the more it will pay you to miss not a single item.

Other commodities, in profusion, are shown in the catalogs. Perhaps many would interest you as much as those listed here. Request to the Quartermaster Supply Officer, 1st Ave. and 59th St., Brooklyn, N. Y., will bring the New Cumberland and Philadelphia auction catalogs promptly. The Quartermaster Supply Officer, 1819 W. Pershing Road, Chicago, Ill., will be equally glad to send you a catalog of the Columbus auction. The Government reserves the right to reject any or all bids.

ARTMENT

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WAR DEPARTMENT

DECEMBER

Dec. 7—SYMINGTON GUN PLANT—Chicago, Ill., Auction. For catalog write Q. M. Construction Service, 3335 Munitions Bldg., Washington, D. C., or Chas. S. Gerth, 101 W. 42nd St., New York City.

Dec. 8—LEATHER AND HARNESS—New Cumberland, Pa., Auction. For catalog write Q. M. S. O., 1st Ave. & 59th St., Brooklyn, N. Y.

Dec. 12—Q. M. SUPPLIES—Columbus, O., Auction. For catalog write Q. M. S. O., 1819 W. Pershing Road, Chicago, Ill.

Dec. 13—ORDNANCE MATERIALS—Morgan Depot, South Amboy, N. J., Auction. For catalog write Phila. Dist. Ord. Salvage Board, Frankford Arsenal, Philadelphia, Pa.

SEND FOR CATALOG

SELLING PROGRAM

DECEMBER—Cont.

Dec. 13—ORDNANCE MATERIALS—Rock Island. Ill., Sealed Bid. For catalog write Commanding Officer, Rock Island Arsenal, Rock Island, Ill.

Dec. 15—Q. M. SUPPLIES—Philadelphia, Pa., Auction. For catalog write Q. M. S. O., 1st Ave. & 59th St., Brooklyn, N. Y.

Dec. 19—ORDNANCE MATERIALS—Middletown, Pa., Auction. For catalog write Phila. Dist. Ord. Salvage Board, Frankford Arsenal, Philadelphia, Pa.

Dec. 20—FLOATING EQUIPMENT—San Francisco, Calif., Sealed Bids. For catalog write Western Surplus Property Control Officer, Ft. Mason, San Francisco, Calif.

The Government reserves the right to reject any or all bids

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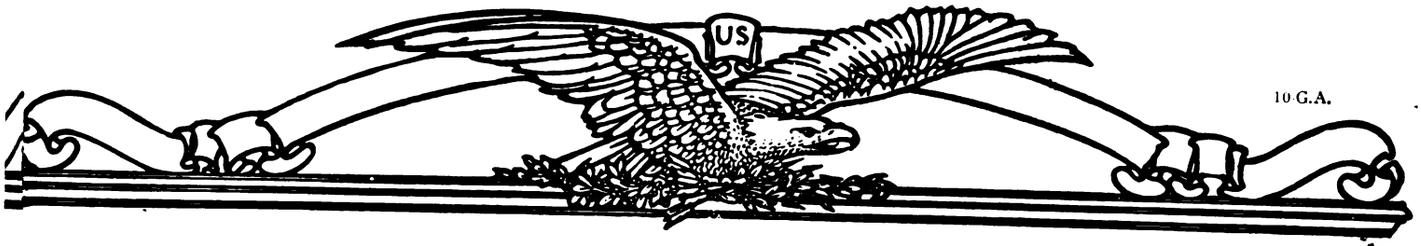

No Profit in Marking Time

IDLE machines do more than gather dust. They pile up a costly overhead—while you're waiting for the material that wasn't delivered on schedule.

Many a plant has been saved this embarrassment and expense by discovering a War Department Sale on just the materials they needed. For every War Department Sale means *immediate delivery!*

And a big saving, as well.

Look in your business paper or the daily press for the Sales announcements. When you find one that fits your needs, send for the catalog. Then seize your opportunity, for such a one will never come again. Address inquiries to Major J. L. Frink, Chief, Sales Promotion Section, Office, Director of Sales, Room 2515, Munitions Building, Washington, D. C.

Send for this booklet, The Story of War Department Sales

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Who wants these boats?

MARINE EQUIPMENT

Floating Equipment located in the Philippines and Alaska is offered for sale by sealed bid on December 20th

THERE are 22 boats in all, consisting of Gasoline and Steam Launches, a Yacht, Transport, Barge, two Yawls, two Sub-Chasers and two Distribution Barks. Seven of these boats are in poor condition, but the remainder are in fair or serviceable condition. This equipment is located and designated as follows:

Manila, P. I.—Steam Launch, "Chicago," length 85′, wood; Steam Launch, "New Orleans," length 86′, wood; Steam Launch, "Peterson," length 57′ 4″, wood; Gasoline Launch, "Hugh McGrath," length 35′, wood; Steam Yacht, "El Aquila," 185′, steel; Steam Launch, "Louisville," length 72′, wood; Steam Launch, "Reilly," length 78′, wood; Army Transport, "Warren," length 370′ 7″, steel; Steam Launch, "Bangor," length 84′, wood; Steam Launch, Florida, length 71′ 6″, wood; Steam Launch, "Missoula," length 86′, wood; Steam Launch, "Rochester," length 69′, wood; Sub-Chaser, V-11, length 110′, wood.

Honolulu, H. T.—Gasoline Mine Yawls, M-220 and M-221, length 24′, wood; Sub-Chaser, V-10, length 110′, wood; Distribution Boats, L-5 and L-6, gasoline motors, length 32′, wood.

Valdez, Alaska—Harbor Boat, "Lieut. C. V. Donaldson," length 62′, wood, equipped with 1 Marine fore and aft compound engine; Barge, capacity 30 tons, wood.

Fort Gibbons, Alaska—Gasoline Launch, "Walter H. Rodney," length 20′, wood.

Fort St. Michael, Alaska—Wood Lighter, length 45′, wood.

Circular proposal gives complete specifications and all terms of sale. Same can be obtained at either of the addresses below, where bids will also be opened. The Government reserves the right to reject any or all bids.

Western Surplus Property Control Officer, Fort Mason, Cal.
Commanding Officer, Q. M. Intermediate Depot, Seattle, Wash.
Commanding Officer, Philippine Q. M. Area Depot, Manila, P. I.
Commanding Officer, Honolulu Q. M. Area Depot, Honolulu, H. T.
Assistant Surplus Property Officer, where boats are located.

WAR DEPARTMENT

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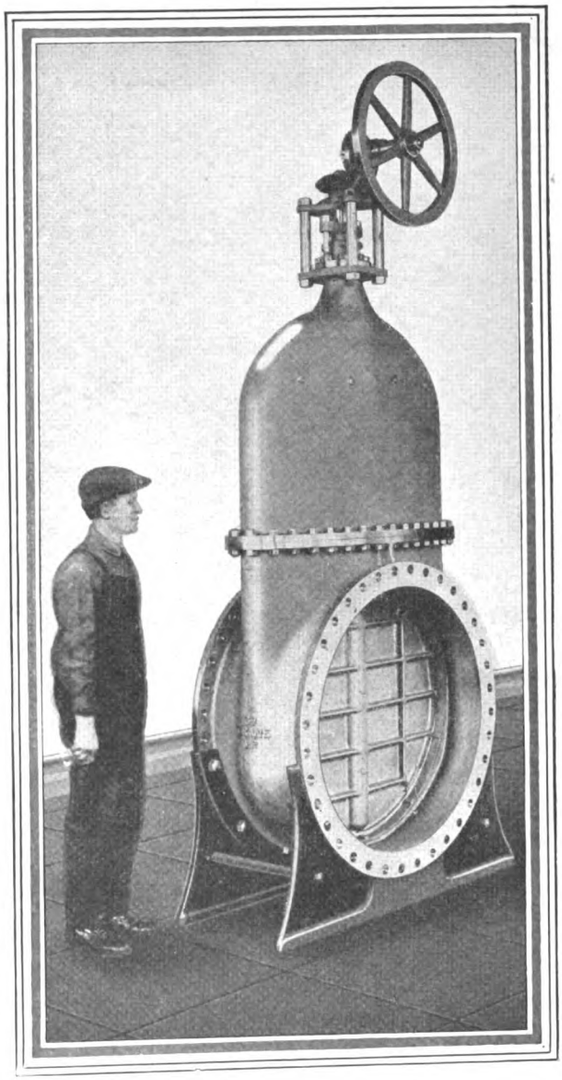
Valves for Standard and Special Service

The large gate valve pictured at the right was produced by Crane Co. for an unusual type of marine service. Very light in design, it is particularly adapted for low pressure service on shipboard where reduced weight is an important item. Its construction, of special composition metal, prevents salt water corrosion. It is the largest brass gate valve ever built.

The experience of Crane engineers is always at your disposal—to solve difficult piping problems and to produce any special equipment required for unusual service. Numerous designs and metallic alloys are continually being developed by Crane specialists to meet unusual conditions, such as the presence of mild acids, electrolysis and high temperatures.



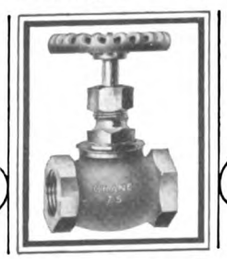
CRANE

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVE., CHICAGO

Branches and Sales Offices in One Hundred and Thirty-five Cities

National Exhibit Rooms: Chicago, New York, Atlantic City

Works: Chicago and Bridgeport



Crane 75 Low Pressure Globe Valve

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G-E Electric Auxiliary Equipment

The Ship's Eye
A good deal depends on that steady, powerful beam projected from a ship's searchlight. G-E Searchlights for direct or remote control are built for service. They have the same dependability possessed by all the other G-E equipment for electrifying a ship and its auxiliaries.
Peek Into a Seaworthy Motor
Water-tight
This controller was built for a long and useful life on deck. It is not only immune to the effects of sea air but protected against damage from temporary submergence. The type COM waterproof motor with this controller for driving deck auxiliaries is a combination hard to beat.
Economical Power
This G-E Auxiliary Generator, driven by an oil engine, is a great fuel saver, especially on a ship in port. It is a reliable power source—just what a ship owner needs when he electrifies his auxiliaries to save operating costs, labor, and hull space.
General Electric Company
To Control a Ship's Power
The Switchboard is the keystone of a ship's electrical distribution system. Switchboards, and the devices mounted on them must be depended upon. In the case of G-E Switchboards, they can be absolutely. Like all other G-E special equipment for ships, they are well protected against conditions found at sea.
Built for the Deck
This is the COM motor, waterproof, for use up on deck. It has many special features, not built into motors for land use, and will drive winches, hoists, windlasses and capstans at high efficiency in all kinds of weather. Its control equipment is just as fit for the service.
Electric
Fit for Sea Service
Electric power in small amounts is ably furnished by G-E Steam Engine-driven Generator Sets. These sets are "marine" through and through, designed for service on a ship. Reliable and seaworthy, they have built up a reputation for long, satisfactory performance.
A "Repairman" Aboard
For making minor and emergency repairs, especially at sea, you need a G-E Electric Arc Welding Set. In hundreds of cases — patches, broken parts, reinforcements, this electric welder can be of great advantage. An ingenious marine engineer will keep it busy.
General Electric Company

For your requirements:

G-E Turbine-Electric Drive
G-E Electric Drive for Motorships
G-E Marine-Geared Turbines
G-E Electric Drive for Auxiliaries

General Electric Company

General Office Schenectady, N.Y.

Sales Offices in all large cities

30-35

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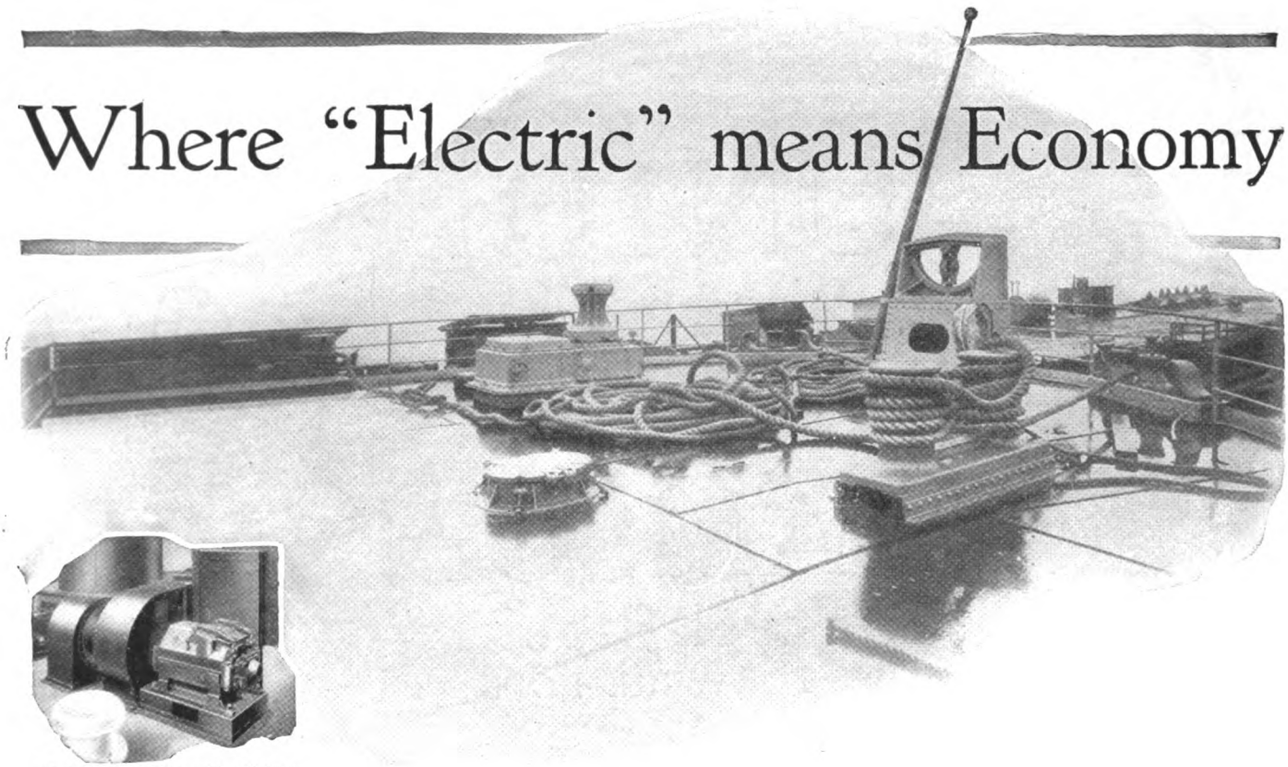
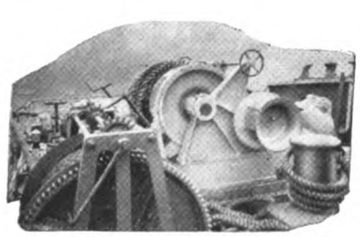
Where "Electric" means Economy



G-E Motor Driving Ventilating Fan on Deck, S. S. Munargo



Anchor Windlass, G-E Motor-driven, M. S. Kennecott

G-E Motors Driving Cargo Winches

G-E MARINE EQUIPMENT TO MEET YOUR REQUIREMENTS:

Electric Drive for Motorships
Turbine-electric Drive
Marine Geared Turbines
Electric Drive for Auxiliaries

Don't Pipe Steam to the Ship's Roof

Imagine a factory with steam-driven machinery on the roof, steam pipes exposed and uncovered, engine room apparatus installed in a small space and inaccessible, and pipes, valves, and fittings adding steam losses by leaks and radiation. Such a plant would resemble a ship with steam-driven auxiliaries.

It has been proved that electricity is transmitted and applied more economically and with greater reliability than any other form of power. And today there is electrical apparatus built for service on the sea.

The General Electric Company can supply auxiliary marine power plant equipment, enclosed ventilated motors and special control for below-deck auxiliaries, waterproof motors and control for use on deck, marine searchlights, and other auxiliaries. It's all designed for severe marine conditions.

General Electric Company

General Office Schenectady, N.Y.

Sales Offices in all large cities

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UNION

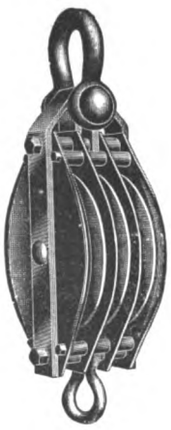
Wood and Steel BLOCKS

FOR MANILA ROPE

SAMSON

Steel Blocks

FOR WIRE ROPE



LOOK FOR TORRINGTON U.S.A. UNION HARDWARE CONN. THIS BRAND

UNION HARDWARE COMPANY

TORRINGTON, CONN.

NEW YORK OFFICE - 151 CHAMBERS ST.

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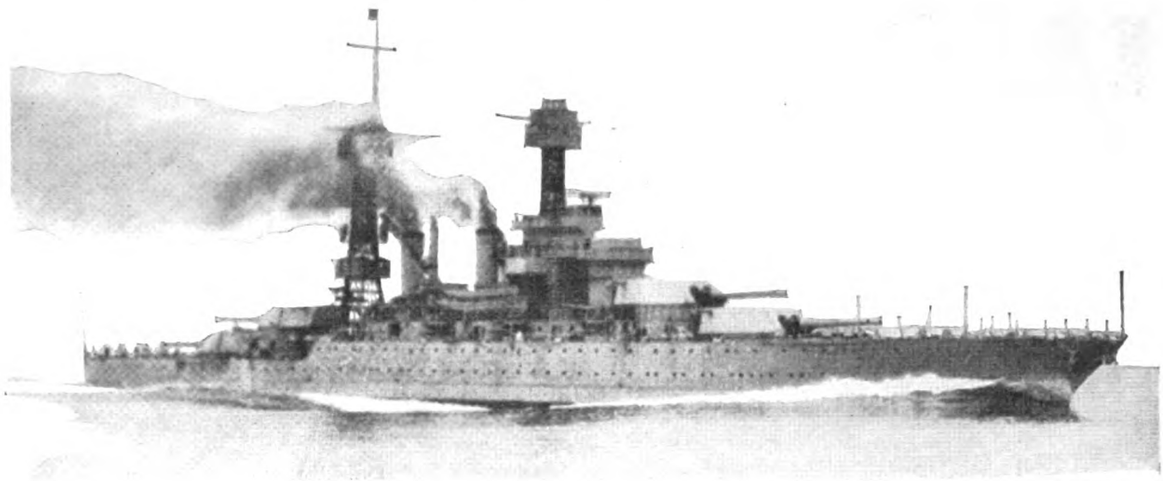

Full speed through the storm

Returning from a voyage to Brazil in September, 1922, the U. S. S. Maryland ran at full speed through a severe gale, the wind reaching 75 miles an hour, and heavy seas pouring over her decks.

While full credit is given her new electric drive, this noteworthy performance would not have been possible if the power plant, including the Anaconda condenser tubes, had not been absolutely dependable.

Anaconda condenser tubes are dependable because of their physical soundness, correct composition and uniform microscopic structure. Embodying a superior quality which is the result of more than a century's technical and mechanical development, Anaconda condenser tubes are used in large quantities by the U. S. Navy and the foremost American ship operators.

Prices quoted upon application. Send inquiries to the nearest office.

THE AMERICAN BRASS COMPANY
GENERAL OFFICES, WATERBURY, CONN.

MILLS AND FACTORIES
Ansonia, Conn. Torrington, Conn. Waterbury, Conn. Buffalo, N.Y. Kenosha, Wis.

OFFICES AND AGENCIES
New York Philadelphia Boston Providence Pittsburgh
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ANACONDA AMERICAN BRASS LIMITED, NEW TORONTO, ONTARIO, CANADA

ANACONDA
CONDENSER TUBES

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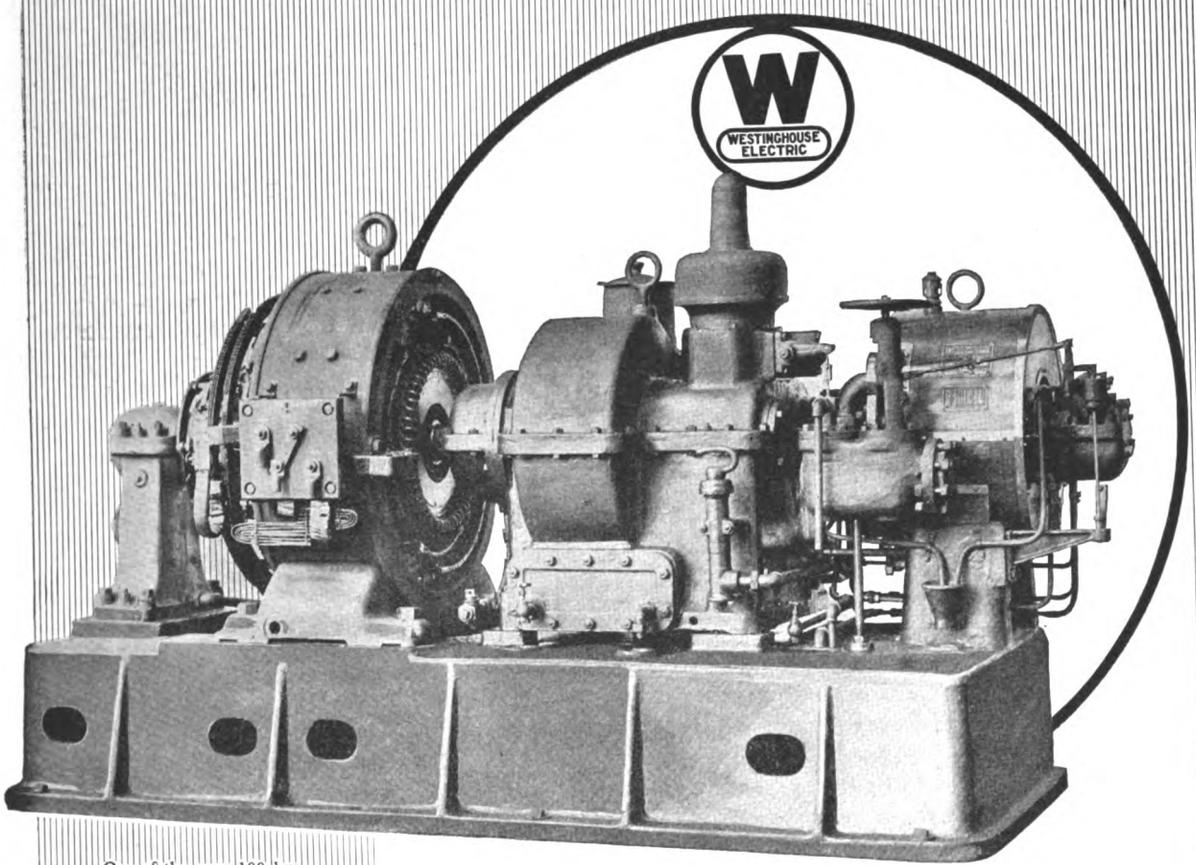
Westinghouse

Marine Lighting Sets



One of the new 100-kw. Westinghouse Marine Lighting Sets installed on reconditioned "President" ships.

A New Design

The newly designed Westinghouse Lighting Set embodies the features that our long experience in the design and application of marine equipment has found to be necessary and desirable.

This new unit is ruggedly constructed throughout—a characteristic quality of all Westinghouse equipment—and will withstand the most exacting requirements of marine service.

A very heavy cast iron bedplate of girder construction prevents any misalignment that might otherwise occur as a result of the weaving of a ship at sea.

The turbine has triple safeguards to prevent accident from over-speeding.

An amply heavy reduction gear, noiseless in operation, acts as the medium between turbine and generator.

An oil cooling coil is attached to an easily removable flange plate, thus assuring easy accessibility.

The generator is of standard Westinghouse marine construction with provision to resist the action of salt moisture.

The United States Shipping Board recently purchased a number of these 100 kw. lighting sets for use on their reconditioned "President" ships.

Other information and data will gladly be furnished on request.

Westinghouse Electric & Manufacturing Company

East Pittsburgh, Pa.

Sales Offices in All Principal Cities
Service Stations in All Principal Ports
Special Pacific Coast Representatives: Hunt, Mirk & Co., San Francisco

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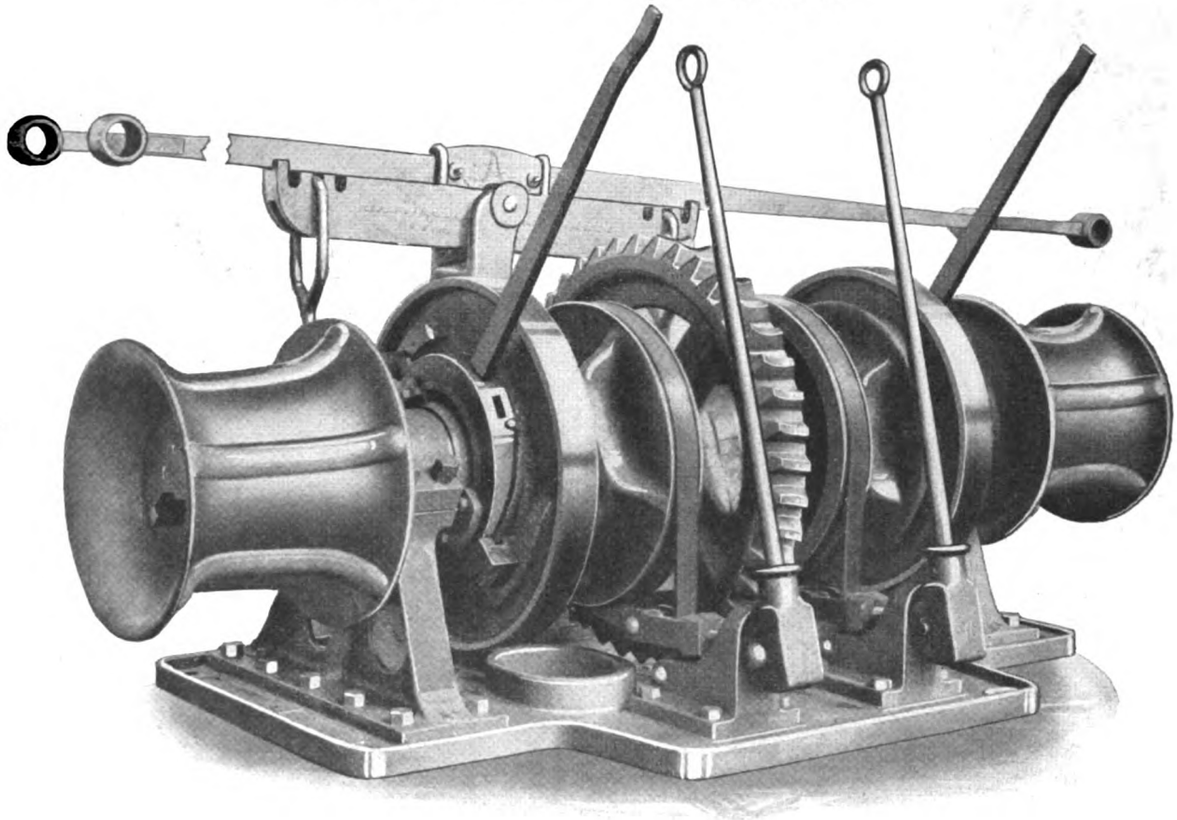
Meets Your Requirements
A-E-CO Windlass



A. E. Co. Windlass selected for the Navy Department's big sea-going tug "Undaunted" because it exactly met their requirements.

Among the many types and sizes built by the American Engineering Company there is one that will suit your
space limitations
ship construction
personal preferences

Send for our Catalogs

We also build:
Steering Gears
Telemotors
Windlasses
Winches
Towing Machines
Capstans
Gypsies
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American Engineering Company
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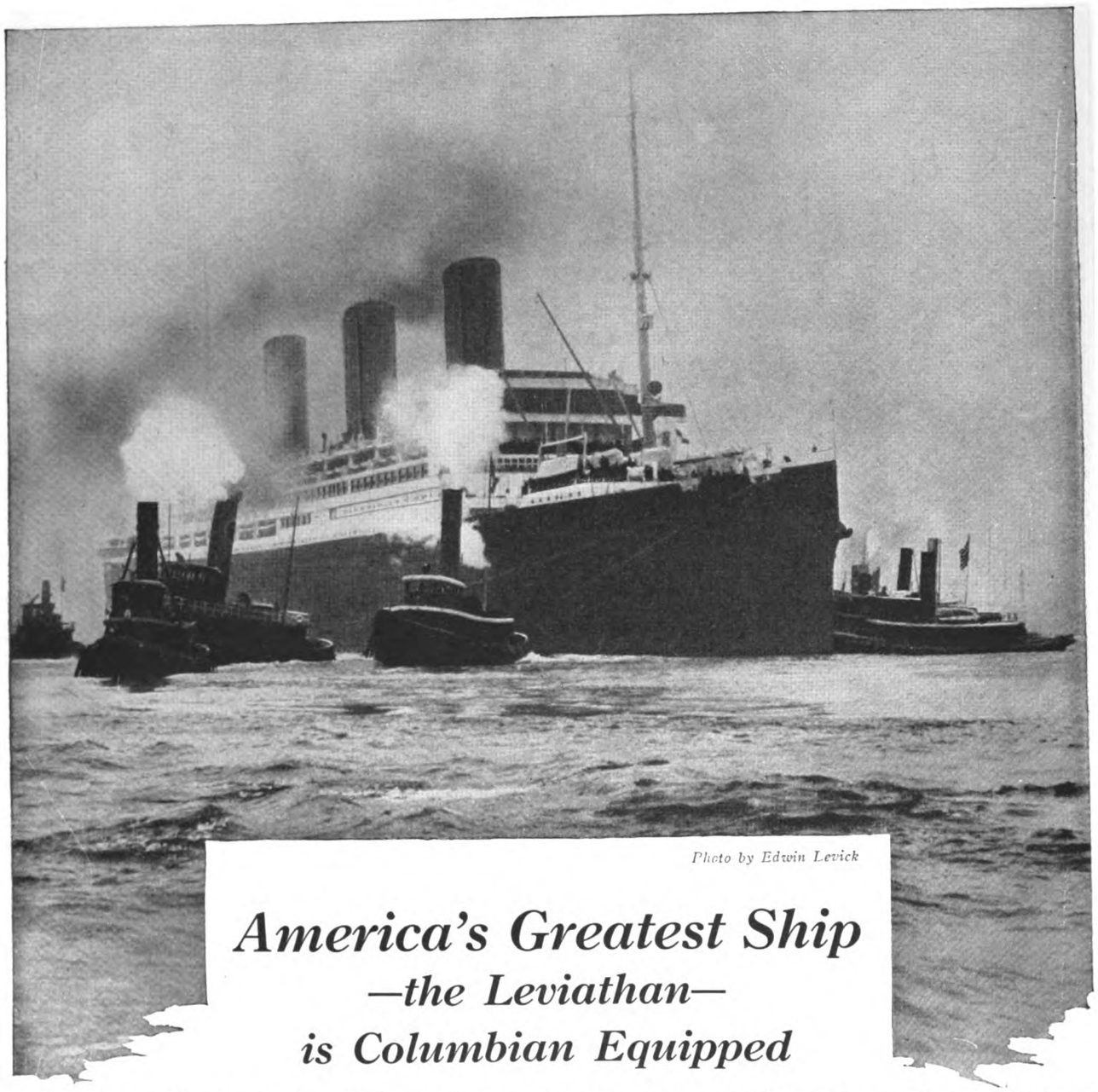

Photo by Edwin Levick

America's Greatest Ship
—the Leviathan—
is Columbian Equipped

The stupendous task of repairing and equipping the mammoth *Leviathan* calls for the finest materials made. Hence, Columbian—the only rope containing the famous red, white and blue *Tape-Marker* Guarantee—has been selected by the Newport News Shipbuilding and Dry Dock Company for this important work.

Columbian *Tape-Marked* Pure Manila Rope is unequalled for durability, long service, and economical operation. That is *why* it is selected for use at the foremost dry docks, shipyards, and on board modern vessels where "first quality" is a pre-requisite.

The genuine Columbian can always be identified as "the Guaranteed Rope" by its red, white and blue *Tape-Marker* bearing the significant words "Guaranteed Rope, made by Columbian Rope Co., Auburn, N. Y." This marker is placed in one of the strands as a protection for both the buyer and manufacturer. Look for it when making your next purchase of rope.

Jobbers and Dealers:—It pays the mariner to use Columbian, and it pays *you* to sell it to him. Write today for catalogue and price list.

By Invitation Member
Emblem of BUSINESS CHARACTER
Rice Leaders of the World Association
Represents High Standing in NAME - PRODUCT - POLICY

Columbian Rope Company

372-90 Genesee Street

AUBURN, "The Cordage City" N. Y.

Branches— New York Chicago Boston Houston

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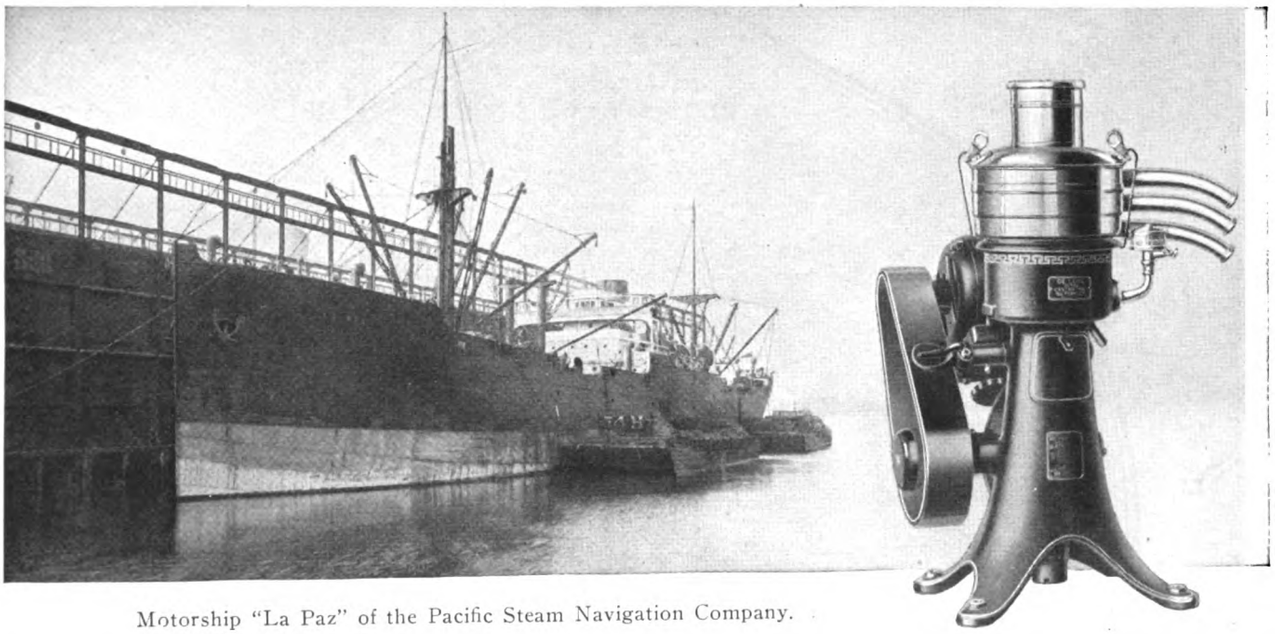

Motorship "La Paz" of the Pacific Steam Navigation Company.

De Laval Oil Purifier is saving oil and protecting engines of motorship "La Paz"

The motorship fleet of the Pacific Steam Navigation Company was planned to transport cargo at the lowest possible cost per ton mile. Few, if any, items of design or equipment which contribute to a lower operating cost for the motorship were overlooked.

On each of these motorships, as on many others, a De Laval Oil Purifier has been installed. With this machine sludge is centrifuged out of the crank-case oil almost as fast as it is formed. As a result bearing wear is greatly reduced and the engines will, without a doubt, give more years of service with less expense for maintenance and overhauling.

By constantly removing impurities from lubricating oil, the De Laval Purifier also effects a great reduction in lubricating costs. The same oil is kept in the system indefinitely, the only replacement being that required to make up for losses by decomposition, evaporation and leakage. No oil need ever be taken out of the system.

No wonder that the Harland & Wolff Shipbuilding Company, builders of the "La Paz" and other vessels of the Pacific Steam Navigation Company's fleet, have in the past two years installed 47 De Laval Purifiers on various vessels building in their yards. The records of other British and American yards also show that De Lavals are now considered as necessary auxiliaries in the engine room of the Diesel or turbine-driven ship.

Mail the coupon for further information regarding ships of either class.

The De Laval Separator Company

New York, 165 Broadway — **Chicago, 29 East Madison St.**

De Laval Steam Turbine Company, Trenton, N. J. — **De Laval Pacific Company, San Francisco, Cal.**

Chadburn's (Ship) Telegraph Company, Ltd., Cyprus Road, Bootle, Liverpool
Turbine Equipment Company, Toronto, Ontario, Canada
The Separator Company, Ltd., Stockholm, Sweden
Europe — Asia — Africa — South America

Sooner or later you will use a De Laval

Please send Bulletin No. 105 containing further information regarding the De Laval Oil Purifier as checked below:

☐ Purification of turbine lubricating oil
☐ Purification of Diesel lubricating oil
☐ Purification of fuel oil

Name .....

Company .....

Address .....

M. E.

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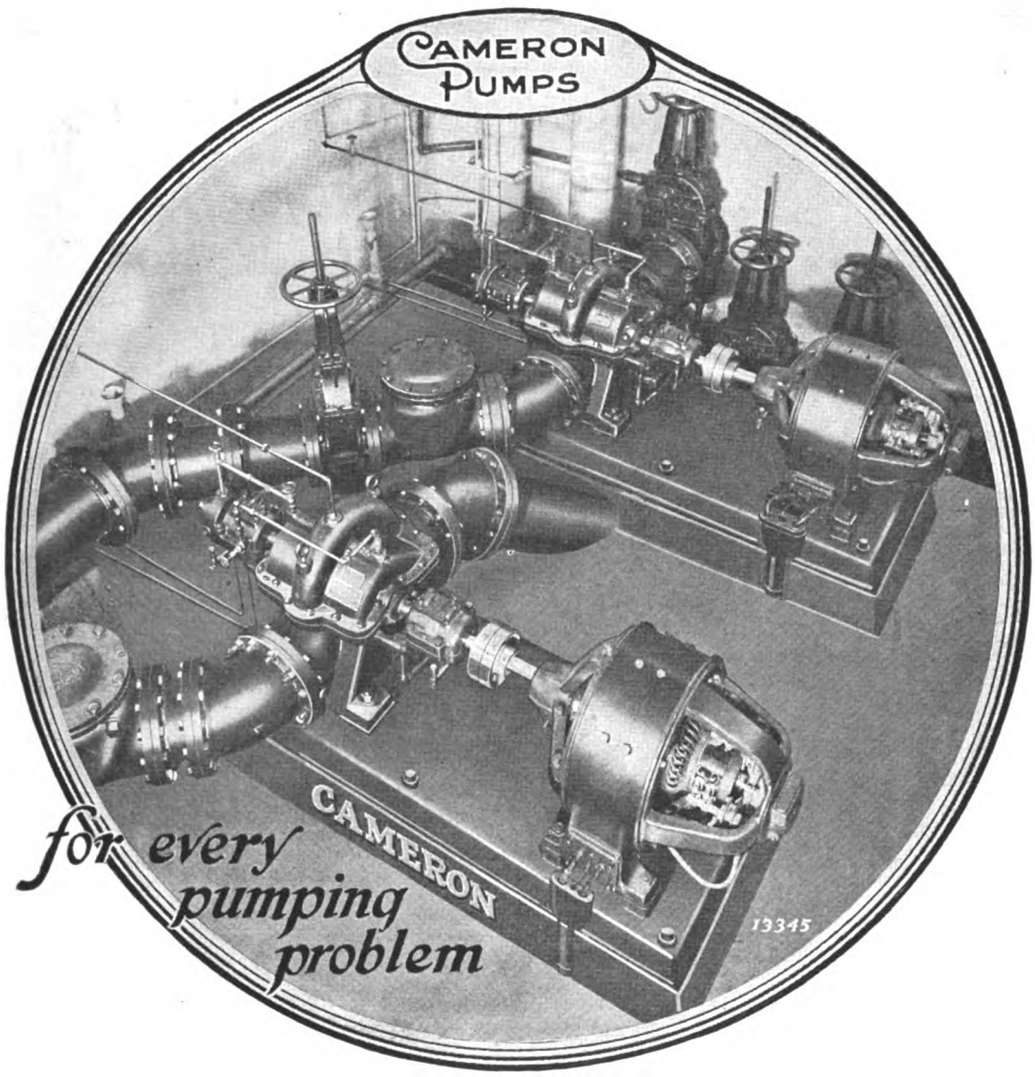

EVERY installation involves different pumping conditions and methods of drive. For over sixty years Cameron Pumps have been in service in every industry so that today Cameron Engineers are qualified by experience to recommend the right type and size of pump best fitted to meet your exact working conditions.

Before shipment, every Cameron Pump is given a thorough test at all capacities and heads within the range of that particular pump. This test also provides a check for running balance (absence of vibration) and proper lubrication.

The name and service of the company is back of every pump sold and constitutes your guarantee for dependable pump performance.

Write for a complete set of Bulletins.

INGERSOLL-RAND COMPANY, 11 Broadway, New York

Offices in all principal domestic and foreign cities

165-DV

Ingersoll-Rand

A. S. CAMERON STEAM PUMP WORKS

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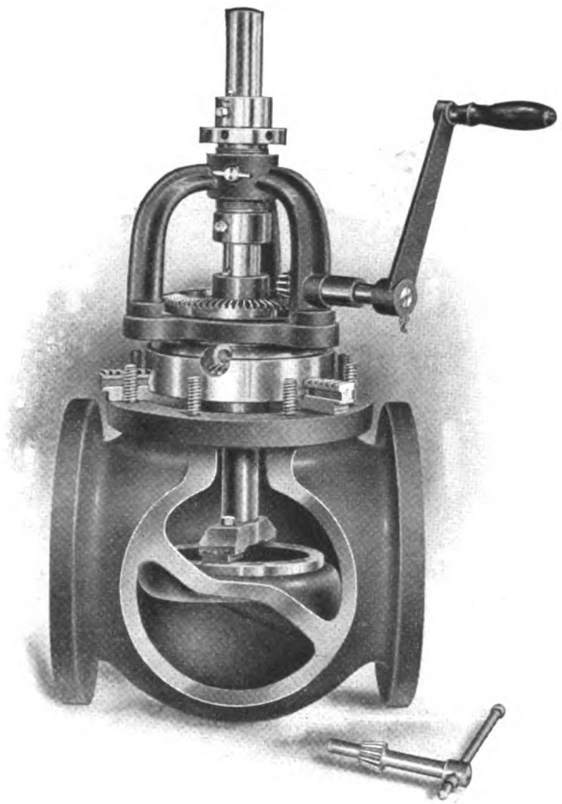

Let Your Saving in Valve Expense Pay for a Dexter Valve Reseating Machine

It is a $75.00 job to remove an 8" Globe Valve from the pipe line, take it to the repair shop, reface its seat and disc and put it back in the line.

The Dexter Globe Valve Reseating Machine will reseat this valve right on the pipe line in a very short time and it will not only do it once but from 10 to 20 times; resulting each time in a perfectly tight seat. The machine is so simple that even an unskilled man can operate it.

A few valves reseated pay for the machine and then the rest is all velvet.

Write now for our catalog 23.

THE LEAVITT MACHINE COMPANY
ORANGE, MASSACHUSETTS, U. S. A.

Canadian Agency: Darling Brothers, Ltd., 120 Prince St., Montreal.

British Agency: Cromil Engineering Co., E. Floor, Milburn House, Newcastle-on-Tyne.

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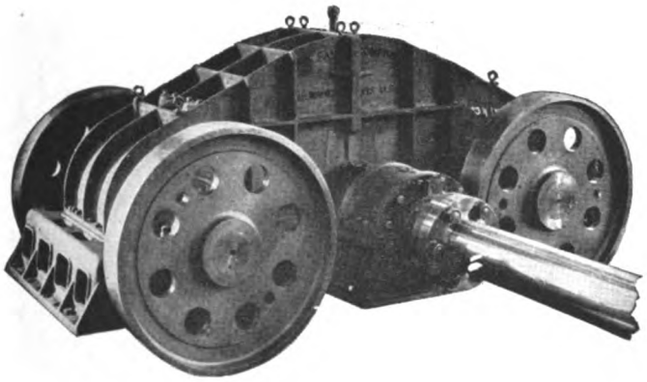

Falk Marine Gear Unit for Oil Engine Drive — 2000 S.H.P., 200 to 90 R.P.M.

Falk Herringbone Gear Units cover the entire range of power transmission requirements for passenger ships, freighters, or warships.

They are equally efficient on steam, electric, or oil engine ships. The smooth, continuous flow of power which Falk Herringbone Gears deliver, their lack of vibration, and their unusually long life under the most severe conditions of marine service, make them a profitable investment for ship owners and operators.

FALK HERRINGBONE MARINE REDUCTION GEARS ARE USED BY THE UNITED STATES NAVY FOR DEPENDABLE MECHANICAL EFFICIENCY

Let our engineering department assist you on your next gearing problem.

FALK
HERRINGBONE GEARS

THE FALK CORPORATION
MILWAUKEE WISCONSIN

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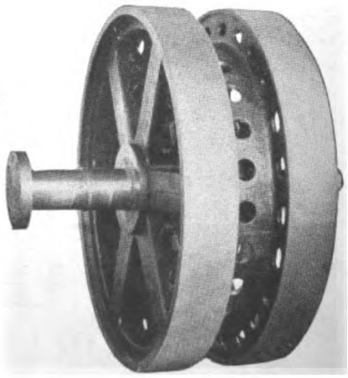

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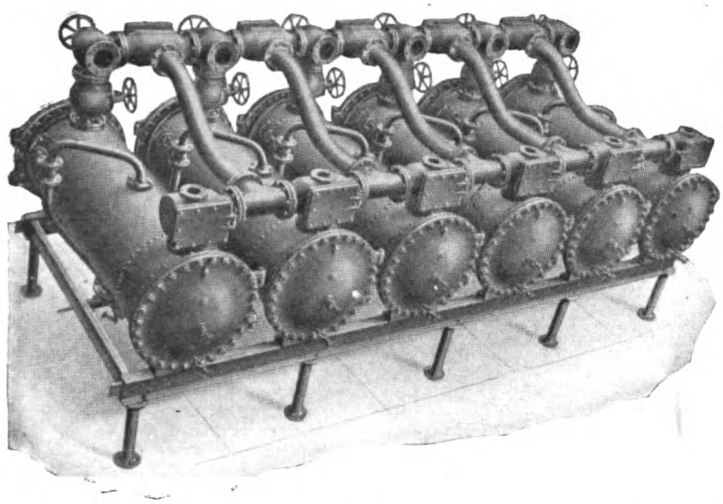

Wheeler Sextuple Effect Evaporator

Capacity, 120 tons of distilled water a day, operates on exhaust steam and carries a vacuum on the last effect. **Copper, Brass and Bronze used throughout.**

This Evaporator Unit is 100% Copper, Brass and Bronze

Not a pound of iron in it.

For marine service, it is perfect—compact, non-corrodible, and 30 per cent lighter than if iron castings had been used.

The shell is of heavy sheet Copper. The tube header, floating head and cover plate are Bronze. The tubes are of seamless drawn Copper expanded into the tube sheets. All feed piping and brine connections are of Brass and Bronze.

* * *

Since the first Bronze-beaked Phoenician galley breasted the seas, Copper metals have been intimately associated with the development of shipping and the advancement of naval design.

Copper, Brass and Bronze are the standard salt water metals.

COPPER & BRASS RESEARCH ASSOCIATION

25 Broadway - New York

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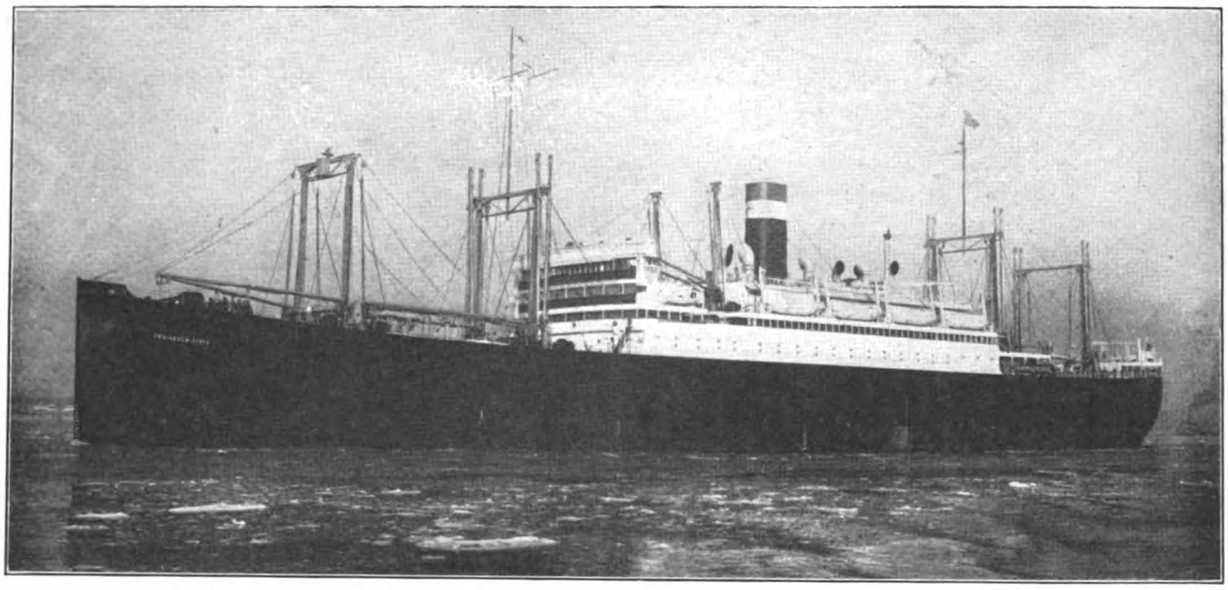


S. S. Peninsula State. HASKELITE used by Robins Dry Dock & Repair Co. in reconditioning this vessel.

HASKELITE BULKHEADS

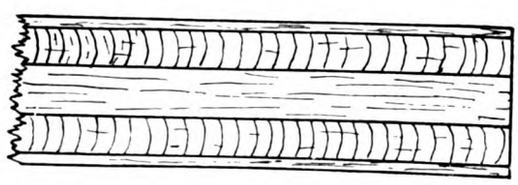
"With reference to the HASKELITE paneling you furnished us in connection with our reconditioning jobs on the Steamships 'Lone Star State' and 'Peninsula State,' we wish to state that this paneling made a very beautiful job and was favorably commented upon by all who inspected it.

"We might add that the delivery of the above material was very satisfactory and we wish to thank you for the attention given same."—Geo. J. Robinson, V. P. & Gen. Mgr., Robins Dry Dock & Repair Co., Brooklyn, N. Y.

THE letter reproduced herewith, from one of the users of HASKELITE contains facts of genuine value to every company engaged in building or reconditioning ships.

HASKELITE is not a veneer. It constitutes the entire bulkhead giving exceptional strength with light weight and unexcelled appearance.

Because HASKELITE is manufactured in large sections, the cost of handling and fitting is much less than where tongue and groove boards are used.



Ask for our FREE booklet of HASKELITE blueprints and photographs, including details on PLYMETL for fire-retardent partitions.

HASKELITE MFG. CORPORATION

133 W. Washington St. Chicago, Ill.

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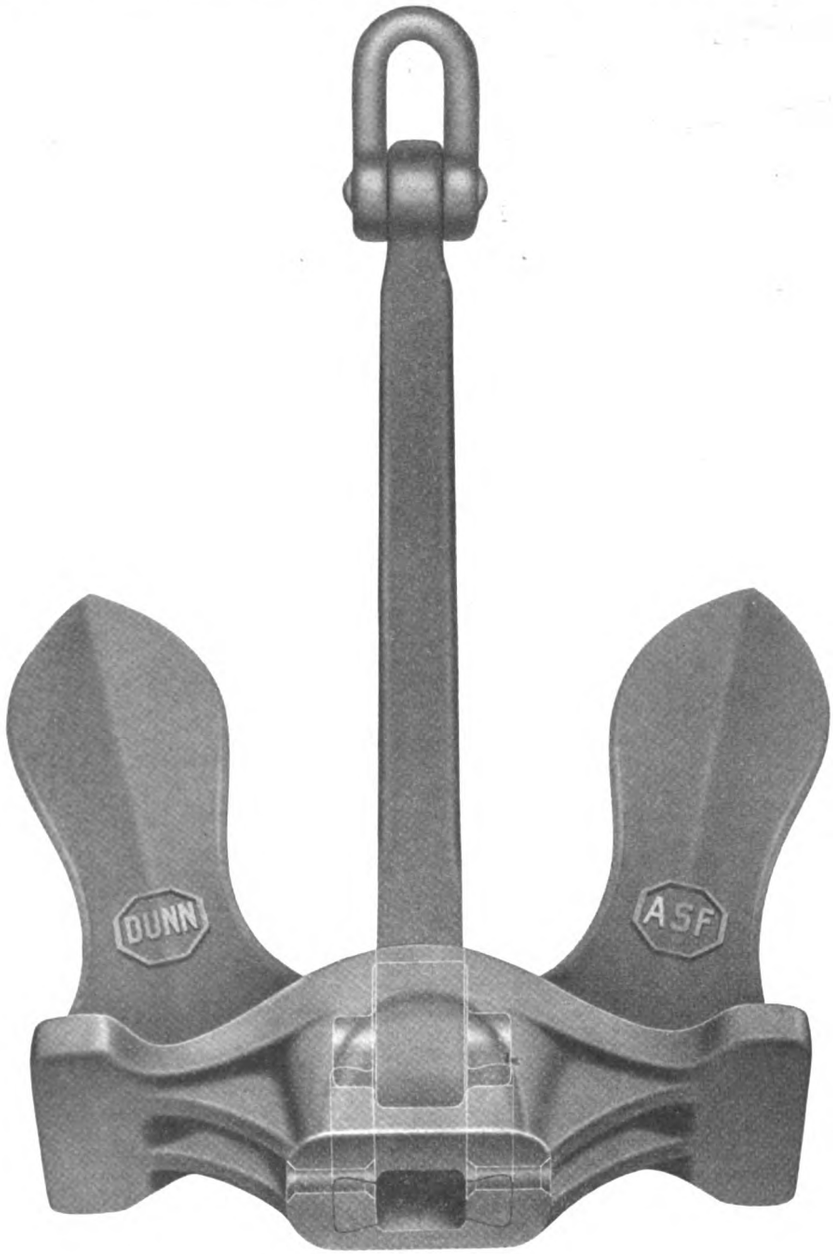
AMERICAN STEEL FOUNDRIES



ASF

DUNN STOCKLESS ANCHORS

ASF

NEW YORK CHICAGO CHESTER, PA.

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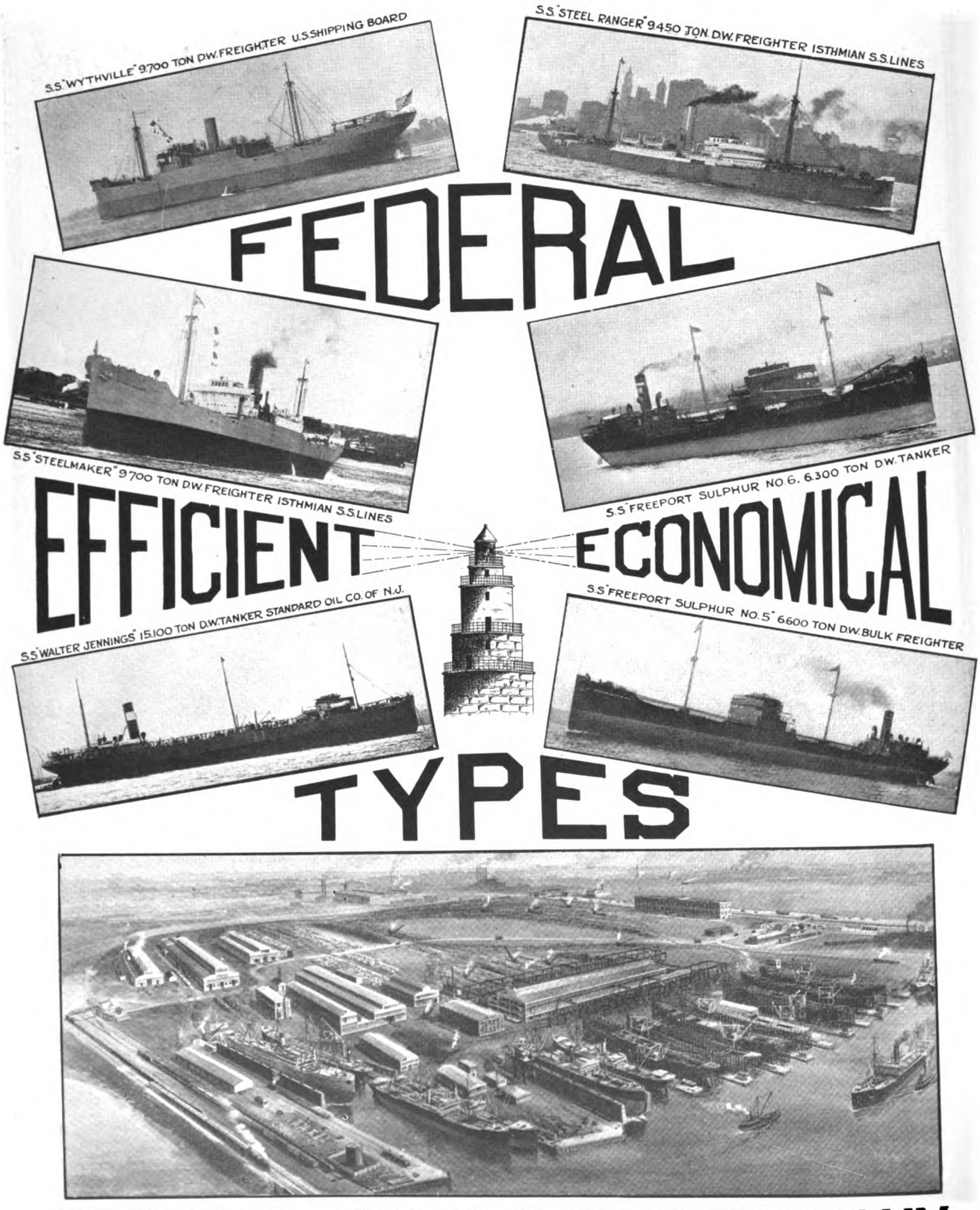
S.S. "WYTHVILLE" 9700 TON DW. FREIGHTER U.S. SHIPPING BOARD
S.S. "STEEL RANGER" 9450 TON DW. FREIGHTER ISTHMIAN S.S. LINES
FEDERAL
S.S. "STEELMAKER" 9700 TON DW. FREIGHTER ISTHMIAN S.S. LINES
S.S. FREEPORT SULPHUR NO. 6. 6300 TON DW. TANKER
EFFICIENT
ECONOMICAL
S.S. "WALTER JENNINGS" 15100 TON DW. TANKER STANDARD OIL CO. OF N.J.
S.S. FREEPORT SULPHUR NO. 5" 6600 TON DW. BULK FREIGHTER
TYPES

FEDERAL SHIPBUILDING COMPANY

SHIPBUILDERS - ENGINEERS - REPAIRERS

NEW YORK

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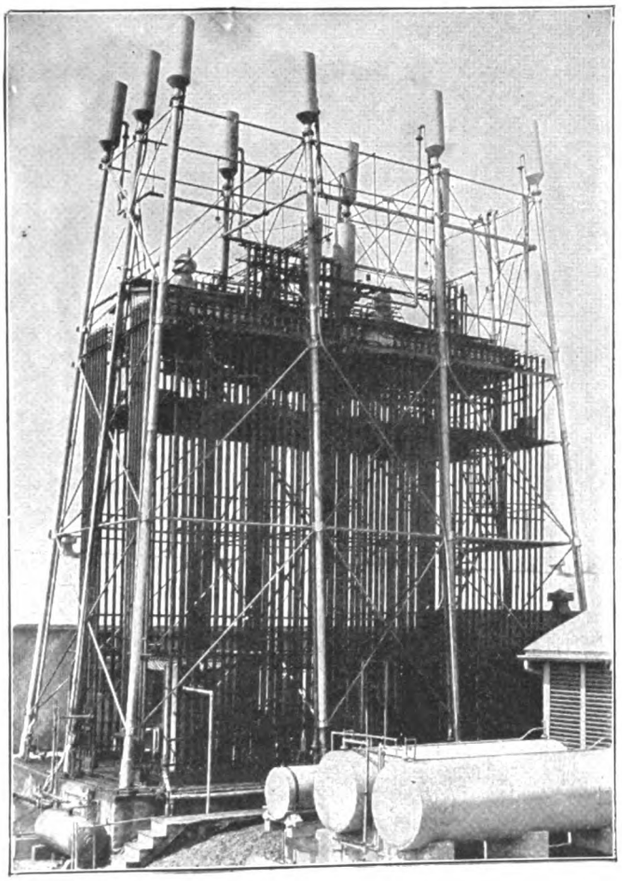
Do it with SMOOTH-ON



SMOOTH-ON No. 1 *for* HOT and COLD OIL SCREW-THREAD JOINTS

The following letter from The Bertsch Process Co., Consulting Engineers of Tulsa, Okla., describes their experience with Smooth-On Iron Cement No. 1 for making permanent hot and cold oil screw-thread joints. The letter is self-explanatory—read it!

"MESSRS. SMOOTH-ON MFG. CO., May 30, 1922.
Jersey City, N. J.
"Gentlemen:—

"In connection with our process of extracting gasoline from natural gas, we use heat-exchangers and stills, of which the latter are directly fired by residue gas.

"The heat-exchangers are formed by vertical pipes, of which a 2-in. pipe is placed within a 3-in. pipe. Through the inner pipe passes oil of from 60 to 160 deg. F., that is to say, the oil of 60 deg. F. enters the pipe at the bottom and leaves it on top with about 160 deg. F. Within the annular space formed by the 2-in. and 3-in. pipes passes hot oil, entering on top at about 450 deg. F. and leaving at the bottom at about 100 deg. F.

"We wish to state that we have used Smooth-On Iron Cement No. 1 for making all screw-thread connections for stills and heat-exchanger joints for both hot and cold oil with wonderful success. We formerly used glycerine and litharge, which did not give satisfaction.

Yours very truly,
THE BERTSCH PROCESS COMPANY.
(Signed) J. C. Bertsch, President."

Once again, Smooth-On Iron Cement No. 1 succeeded in making permanent joints where other methods had failed.

This is only *one* instance where Smooth-On Iron Cement No. 1 proved valuable—hundreds of others are described in the NEW Smooth-On Instruction Book No. 19.

This book, just off the press, is a compilation of the experiences of engineers who have made successful repairs with Smooth-On Iron Cements. It contains 144 pages—and each page illustrates a different power plant repair, described by the engineer who did the work.

Get your copy today—it's FREE—mail the coupon.

Smooth-On Iron Cements are sold by Supply Houses in 5-lb., 10-lb. and 25-lb. tins; also in larger sizes.

SMOOTH-ON MFG. COMPANY
Est. 1895
Dept. 21-L, 570-574 Communipaw Ave.
Jersey City, N. J., U. S. A.

If your Supply House does not carry Smooth-On Iron Cements, send us their name and we shall see that you are supplied.

SMOOTH-ON MFG. CO.,
DEPT. 21-L, JERSEY CITY, N. J.

Gentlemen:—Kindly send me a free copy of Instruction Book No. 19, as per your December advertisement in MARINE ENGINEERING.

Name .....

Address .....

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Winton

COLLEEN

Length: 110 ft. Beam: 18.2. Draft: 6 ft. Owner: Samuel A. Salvage, Port Washington, L. I. Designer: B. T. Dobson, New Bedford, Mass. Builders: George Lawley & Son Corp., Neponsett, Mass.

Power Plant: A pair of six cylinder Winton Diesel Oil Engines rated at 135 H. P. each, designed and built by the Winton Engine Works, Cleveland, Ohio.

WINTON ENGINE WORKS

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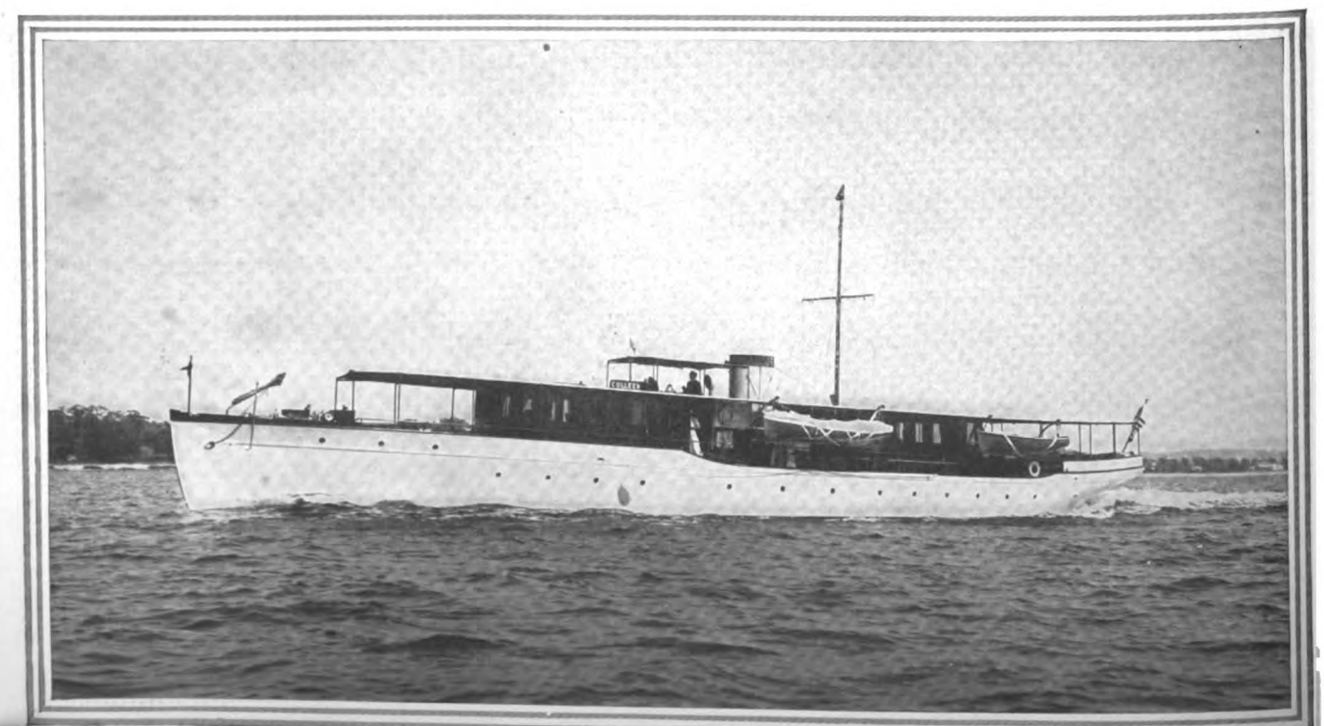
New Orleans: A. Baldwin & Company
Los Angeles: F. G. Bryant, 704 Delta Bldg.
Seattle: H. W. Starrett, Sunset Engine Co.



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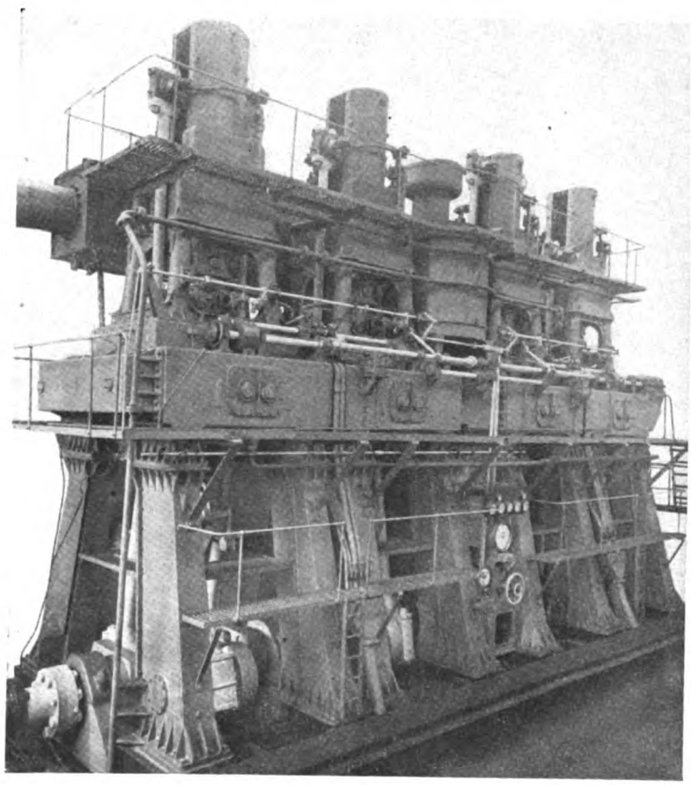
Effects Fuel Economy.



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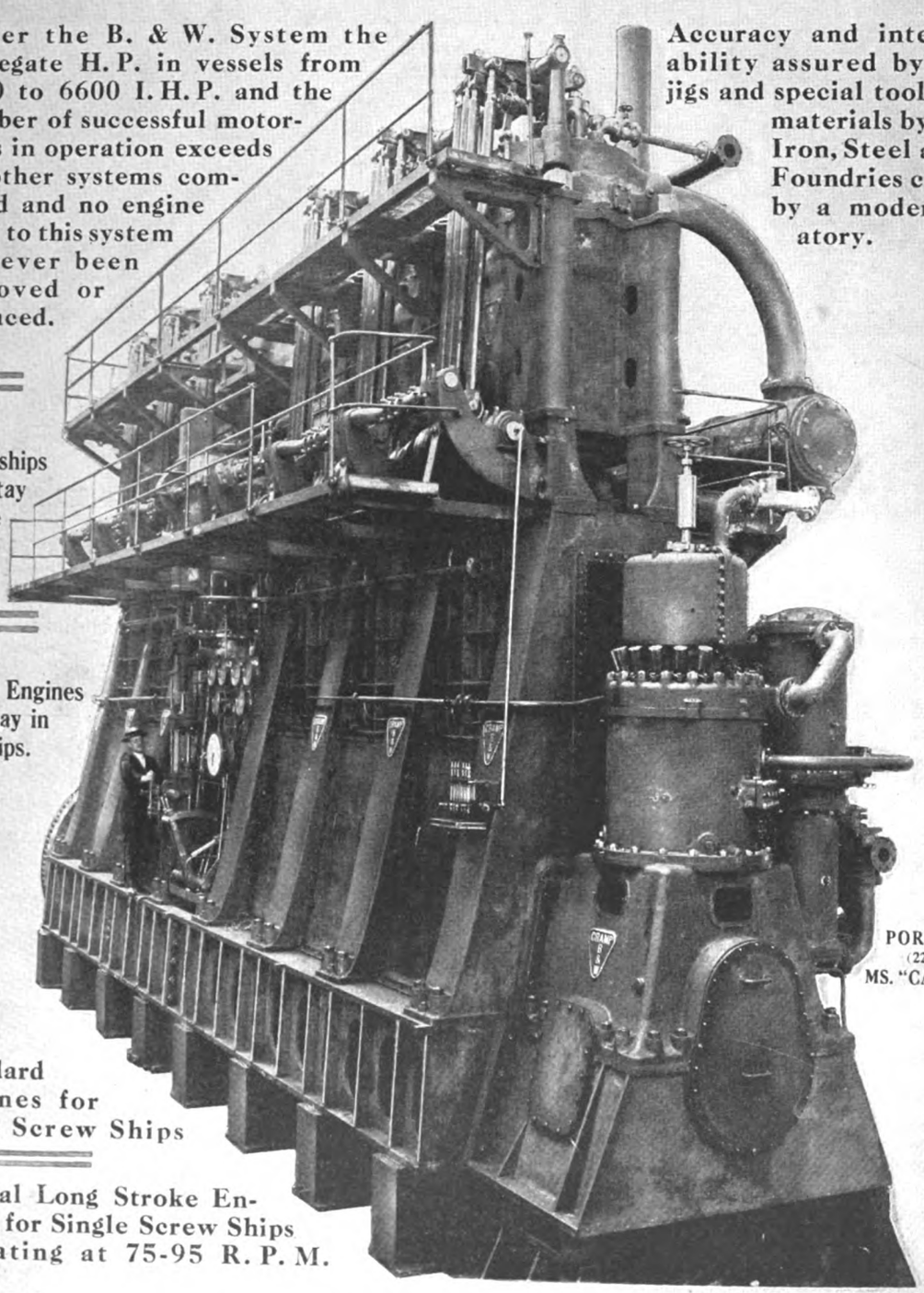

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Standard Engines for Twin Screw Ships

Special Long Stroke Engines for Single Screw Ships operating at 75-95 R. P. M.

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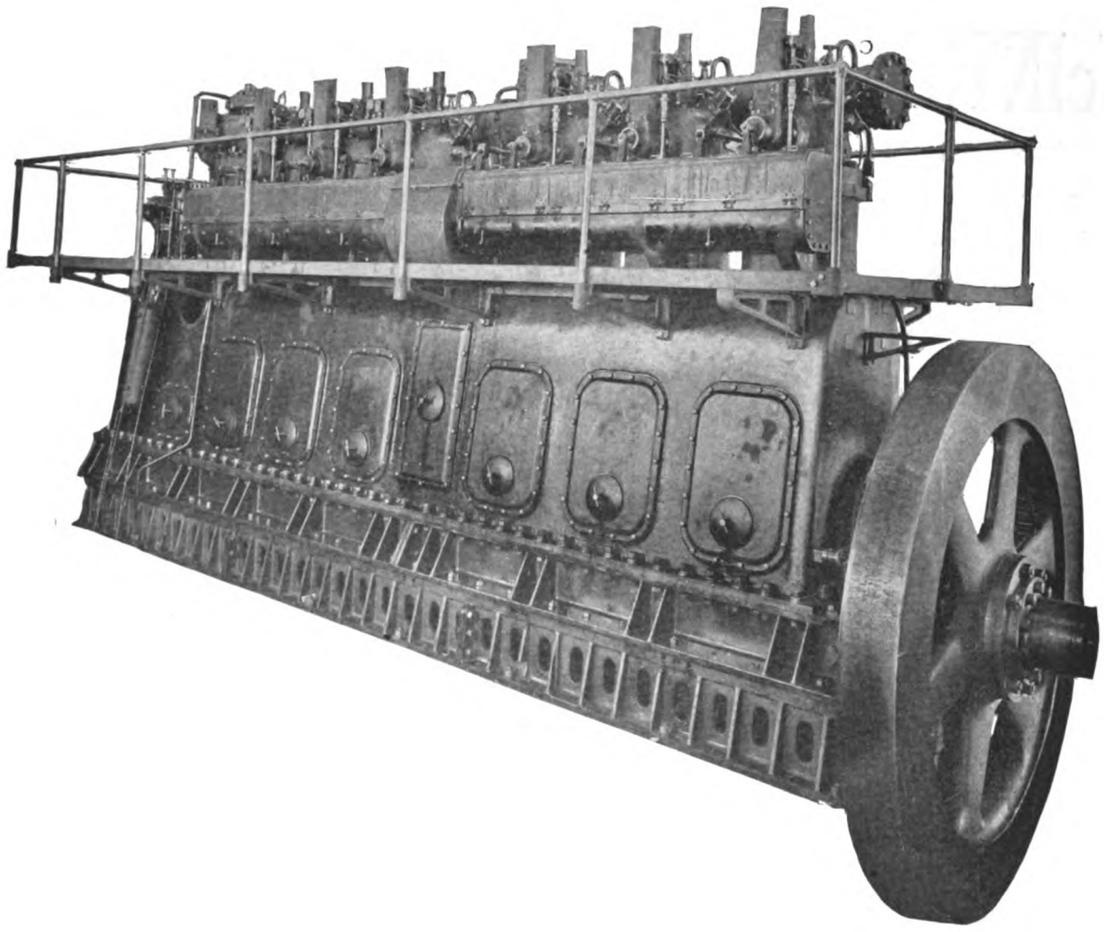

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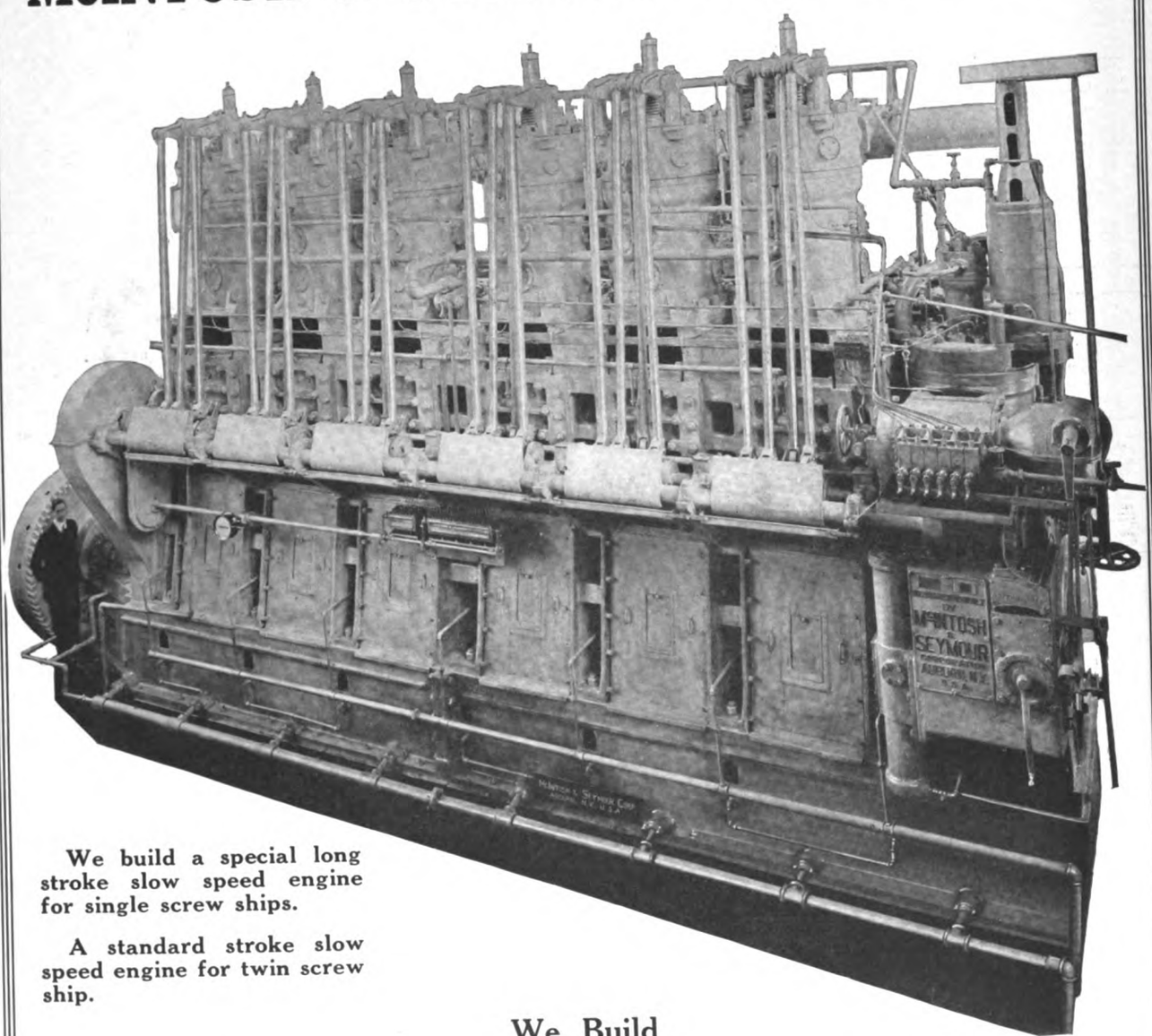

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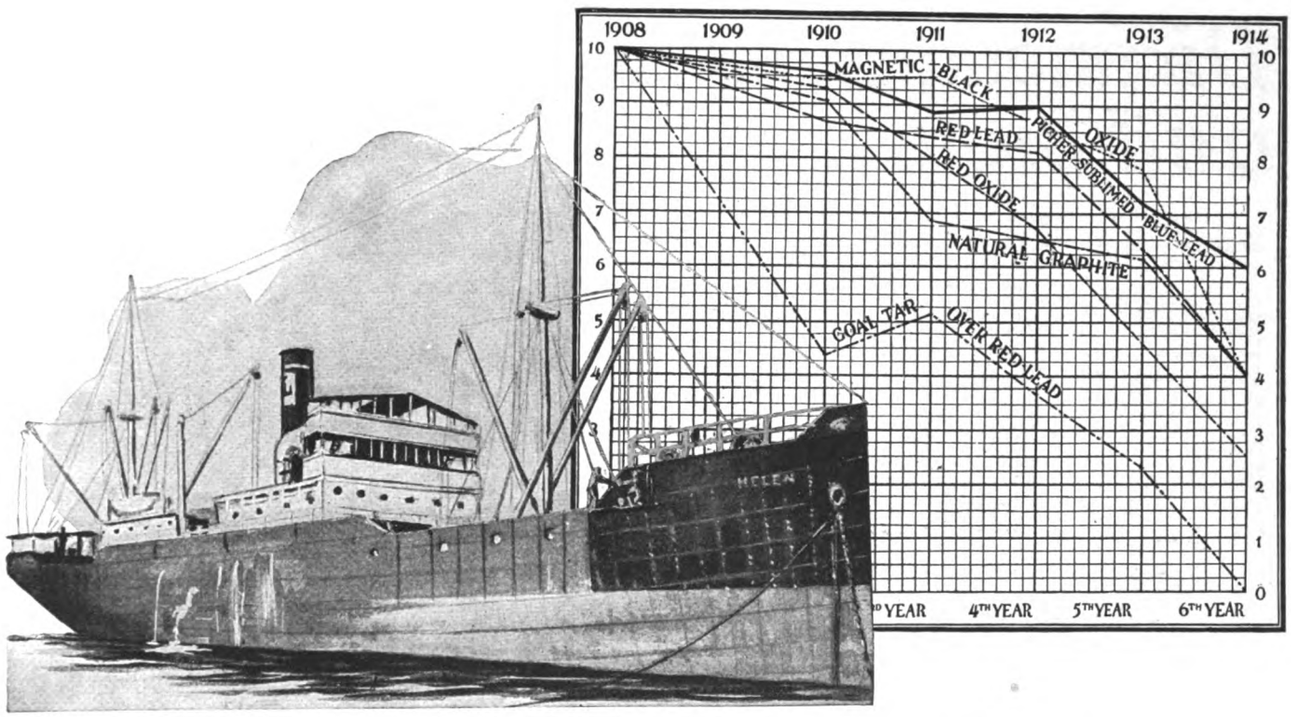

RUST

A vital problem to shipping men

DOES *painting* adequately protect metal against *rust?* How long should such protection endure without repainting? Has any one paint proved its superior efficiency and economy as a rust preventive? If so, what is that paint? These are questions of vital importance to every man interested in the construction and maintenance of shipping. And they are questions which the data presented in the above curves go far toward answering.

In 1908 the American Society for Testing Materials set up at Atlantic City 300 steel plates mounted as the panels of a fence. These panels were then carefully painted, respectively, with three coats of 50 varieties of paint; each paint being thus represented by an average of six specimen panels.

At the end of five years of exposure to the corroding influences of ocean winds and storms, it was found that only on 23 panels the paint still afforded appreciable protection to the metal. These 23 panels were then removed from that location and set up at the end of Young's "Million Dollar" Pier, where they were left exposed for another year.

The panels were then again examined, their condition noted, and appraisal made of the relative protective value demonstrated by the paints with which the surviving panels had been coated. The chart reproduced above records the comparative performances of the four commercial paints which were judged to have made the best showing. In rating these four paints, the figure 10 is assumed to represent theoretical perfection in an absolutely non-deteriorating rust-preventing paint.

A study of this chart clearly indicates that PICHER SUBLIMED BLUE LEAD leads other commercial pigments as a rust preventive. In fact, as the chart shows, the general condition of the panels protected by PICHER SUBLIMED BLUE LEAD was adjudged to be better at the end of six years' exposure, than was that of several of the other pigments at the end of five years.

Every buyer and user of metal protective paints should acquaint himself with the many advantages of PICHER SUBLIMED BLUE LEAD in application and service. Write for our booklet "Buying Rust Protection".

THE EAGLE-PICHER LEAD COMPANY · EAGLE · PICHER · ESTABLISHED 1845

Picher
SUBLIMED BLUE LEAD
What it is—What it does.

PICHER SUBLIMED BLUE LEAD is a "fume product"—made by subliming the lead ore, galena (lead sulphide) and collecting the fumes. The pigment thus produced is a slate gray powder, of impalpable fineness, which when mixed with pure linseed oil produces a paint of remarkable hiding power and exceptional brushing and spreading qualities, which will endure years of exposure in service, without cracking, checking or peeling. This pigment remains perfectly suspended in oil and will not harden in the container.

Low in first cost and of the highest efficiency in service, PICHER SUBLIMED BLUE LEAD will be found the best paint to use for all rust-proofing purposes.

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Picher Sublimed Blue Lead *in Oil*

90% of PURE blue lead ground in 10% of PURE raw linseed oil

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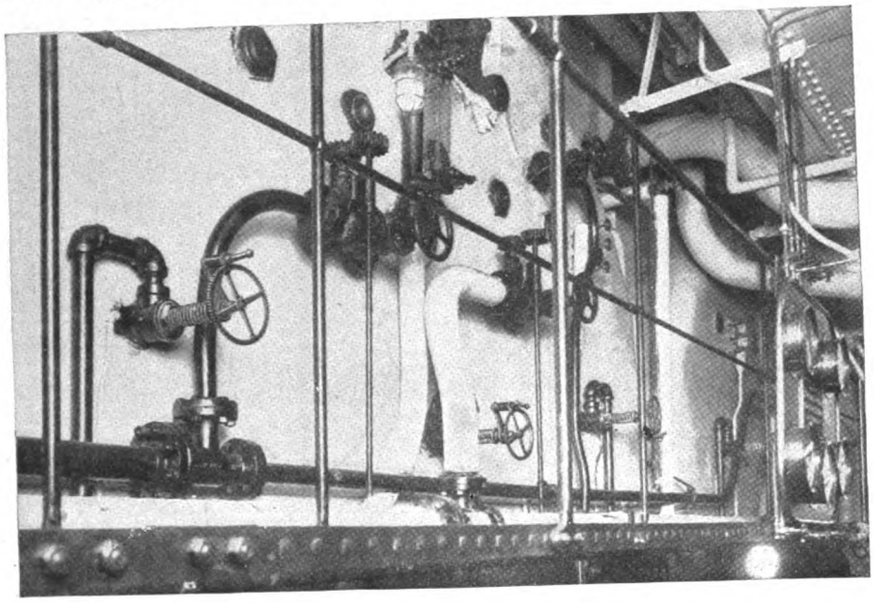
Diamond Soot Blowers Save Fuel and Increase Boiler Efficiency



Soot removal is essential to economy. Power is one of the largest items of expense in the cost of operating a vessel, and the cost of fuel represents on the average 70 per cent. of the cost of power. The presence of soot has cost—it still costs—a loss of hundreds of thousands of tons of coal and hundreds of thousands of barrels of fuel oil a year to ship owners. Soot waste has been eliminated on many ships, and it can be eliminated on all with a consequent notable increase in boiler efficiency and a consequent great increase in marine profits.

There is a Diamond Soot Blower for every marine boiler—rear and front end types for Scotch boilers, hollow staybolt for water tube boilers with hollow stays, revolving unit system for vertically baffled water tube boilers. The Diamond Corporation is the pioneer soot blower manufacturer in the marine field. Its blowers today represent the best fruits of twenty years' practical experience.

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(c) **STEAMING RADIUS; a notable increase as result of savings (a) and (b).**

The savings are the same, whether oil or coal is used as fuel.

Write for full information on blowers for any type of boiler, requesting your copy of the latest edition of Bulletin 134, "How Some Shipowners Have Increased Their Profits."

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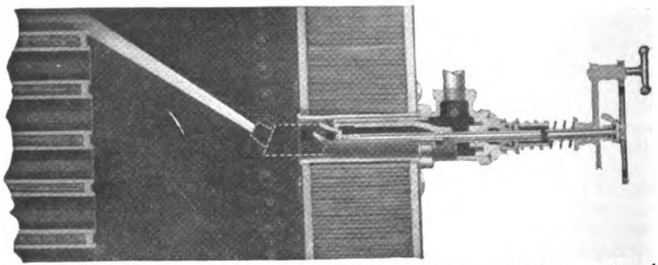

Thousands of Diamond Model "B" Blowers are in use today on Scotch Marine boilers. The blower is permanently installed through the rear water leg, a hole being cut in the plates and a section of tubing expanded and beaded into place. The blower is encased in this tubing. In operation dry steam is shot into each tube with the draft at a terrific velocity, sweeping and scouring the soot from the full length of the tubes.

DIAMOND POWER SPECIALTY CORPORATION

Detroit, Michigan

Diamond

SOOT BLOWERS - SAVE 4 to 8% FUEL

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We will be glad to inform you of the locations of Crandall Dry Docks and forward descriptive pamphlets illustrating them.

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May we serve you?

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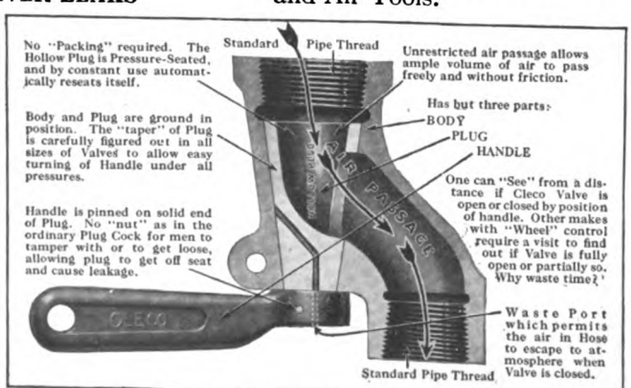
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Unrestricted air passage allows ample volume of air to pass freely and without friction.
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Body and Plug are ground in position. The "taper" of Plug is carefully figured out in all sizes of Valves to allow easy turning of Handle under all pressures.
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One can "See" from a distance if Cleco Valve is open or closed by position of handle. Other makes with "Wheel" control require a visit to find out if Valve is fully open or partially so. Why waste time?
Handle is pinned on solid end of Plug. No "nut" as in the ordinary Plug Cock for men to tamper with or to get loose, allowing plug to get off seat and cause leakage.
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Waste Port which permits the air in Hose to escape to atmosphere when Valve is closed.
Standard Pipe Thread

Write for Illustrated Bulletin No. 52

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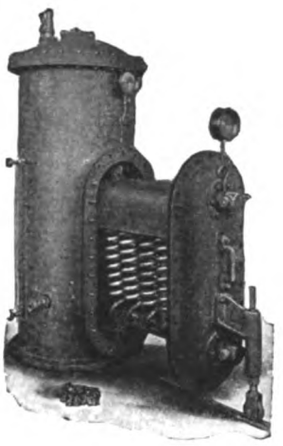

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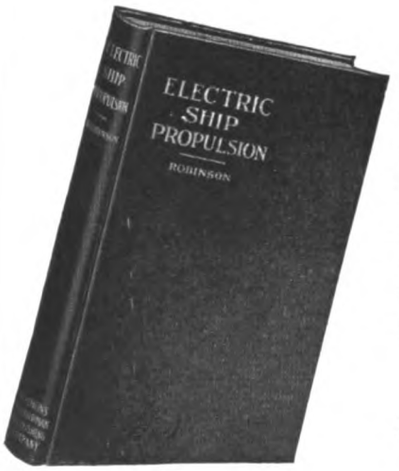
Years of Careful Research Work are Behind Electric Ship Propulsion

By Commander S. M. Robinson, U. S. N.



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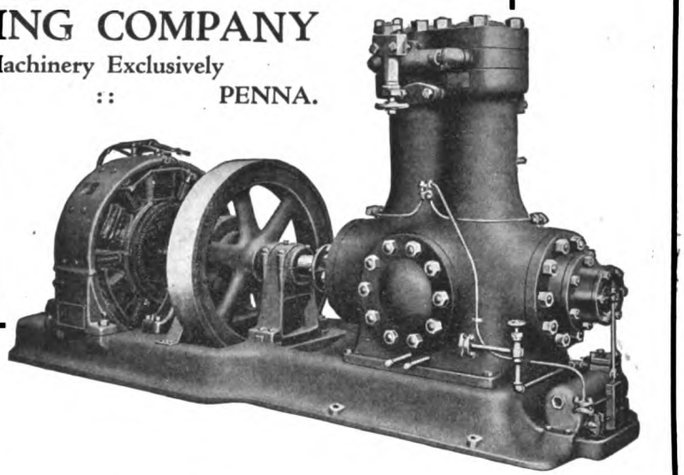

The machine illustrated here is a York Enclosed Type Carbonic Anhydride (CO_2) Machine, direct connected to electric motor, through extended shafts and coupling. These units can be furnished in sizes from one-half ton refrigerating capacity upwards.

"Tumble Out, Cook, and Stand by the Fore-Sheet"

He wasn't only a sea-going chef in the old square riggers, but could often be seen in his shirt sleeves and with apron flapping dodging the sprays and the wash in the lee scuppers when attending to his 'bout ship job of easing off the fore-sheet. Wet and cold he may have been at times, but his SHIPMATE range was there like a fond mother to alleviate his temporary discomforts.

SHIPMATES

Are Made Only By

THE STAMFORD FOUNDRY COMPANY

ESTABLISHED 1830 STAMFORD, CONN.

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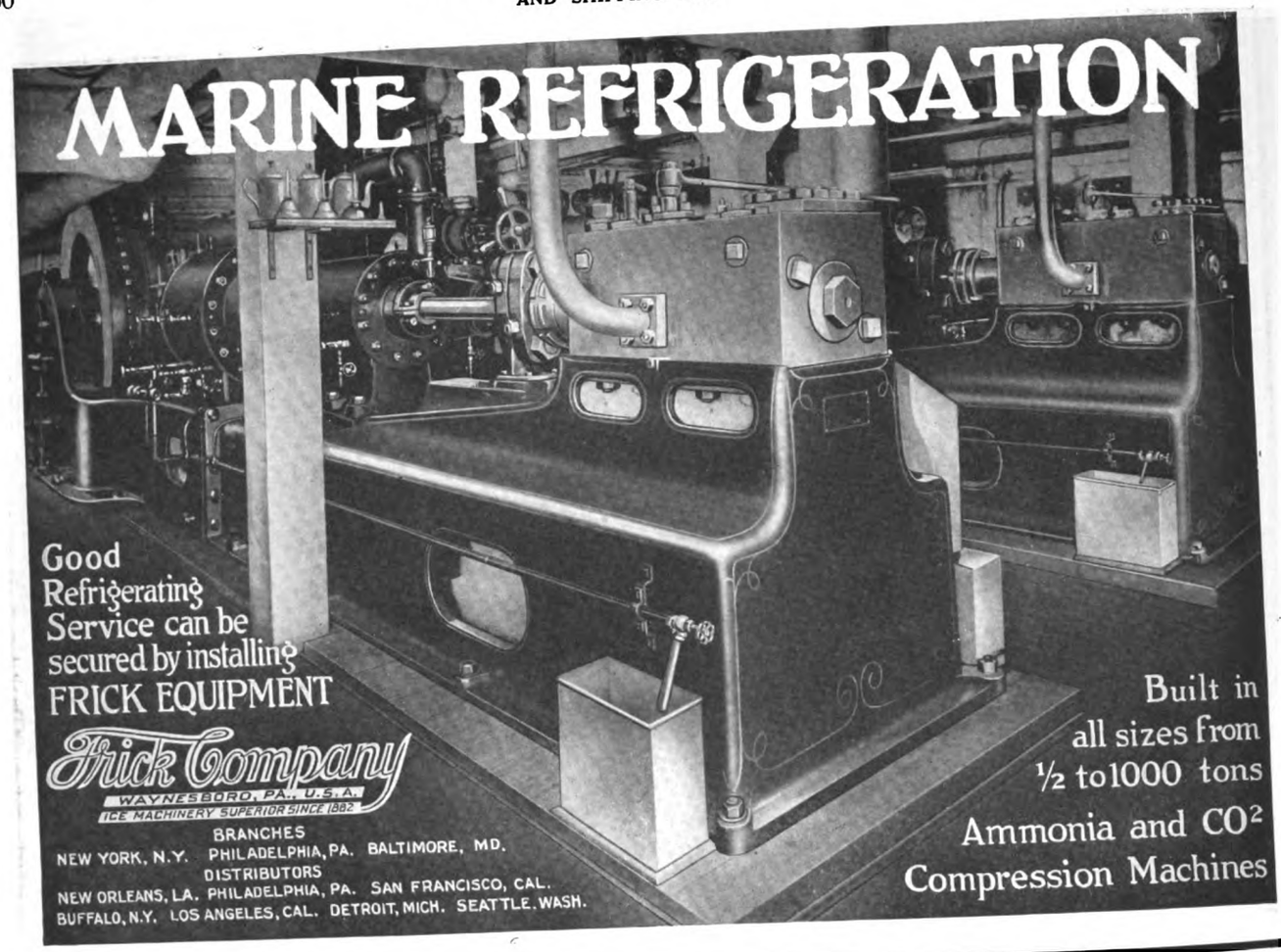
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ICE MACHINERY SUPERIOR SINCE 1882
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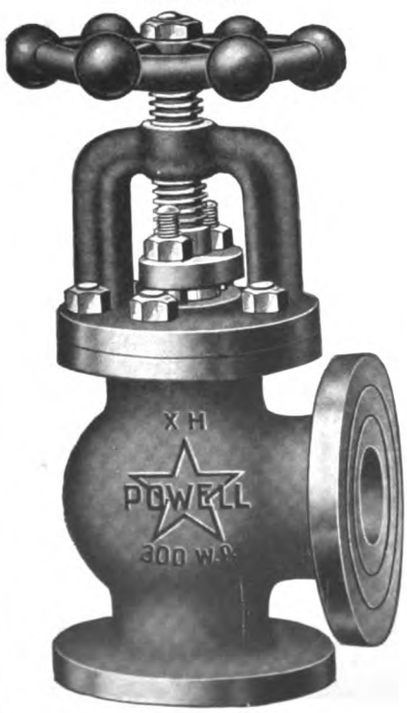
Built in all sizes from ½ to 1000 tons Ammonia and CO2 Compression Machines

FIG. 1147



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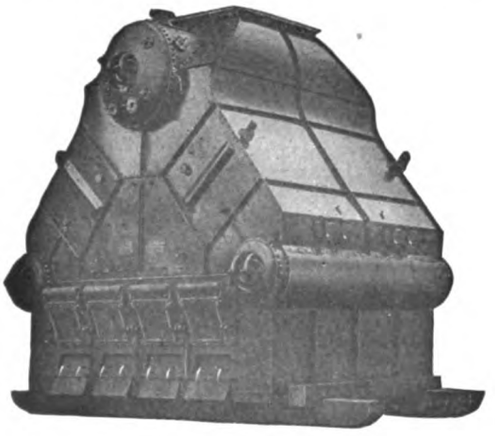
NEW YORK ENGINEERING COMPANY

The Ludlum Water Tube Marine Boiler



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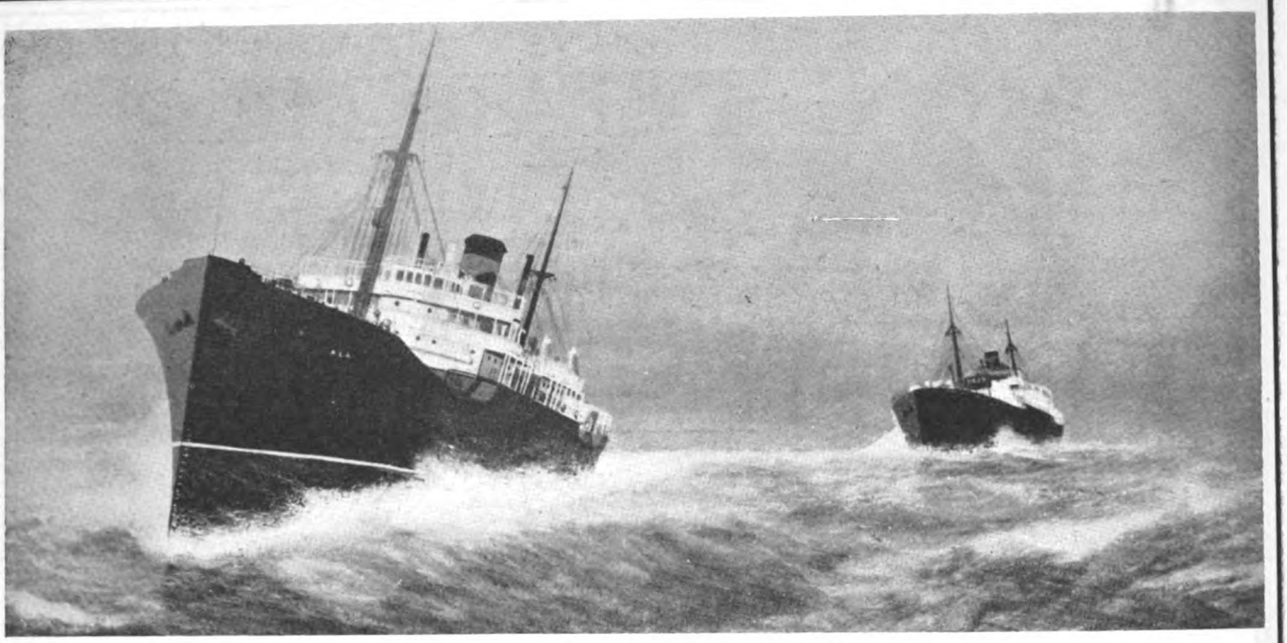

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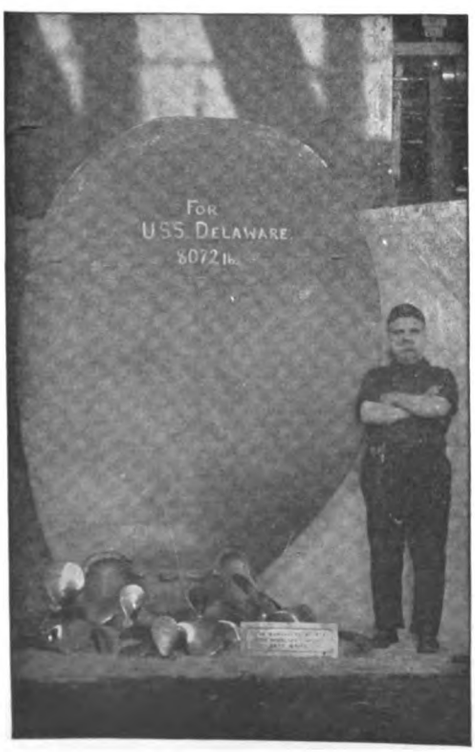
Offices: Chester, Pa., and 39 Broadway, New York



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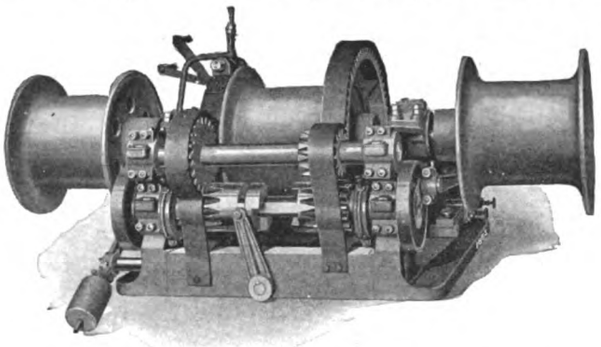

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Single Gear Hoists average loads.
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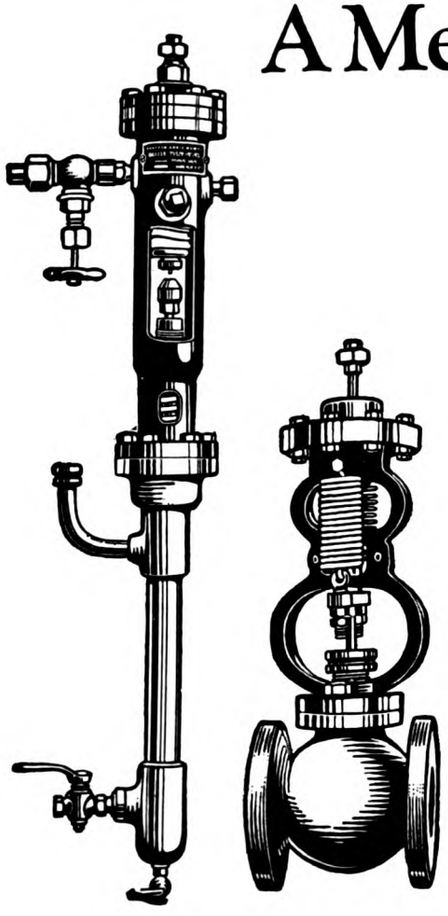

Here's a simple device which marine engineers have been quick to adopt because of its steam saving.

After all, what you ask of your pump is that it bring the pressure to a certain point and then stop its work until that pressure drops, after which, it should resume again and automatically maintain the pressure at the proper point.

The Todd Differential Pump Governor does just this. When the pump's job is done it uses no more steam, wastes no more power until fresh effort is required of it.

A post card will bring you full details of the Todd Governor.

TODD SHIPYARDS CORPORATION
Plant of WHITE FUEL OIL ENGINEERING CORPORATION
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NEW YORK, U.S.A.

DIFFERENTIAL PUMP GOVERNOR

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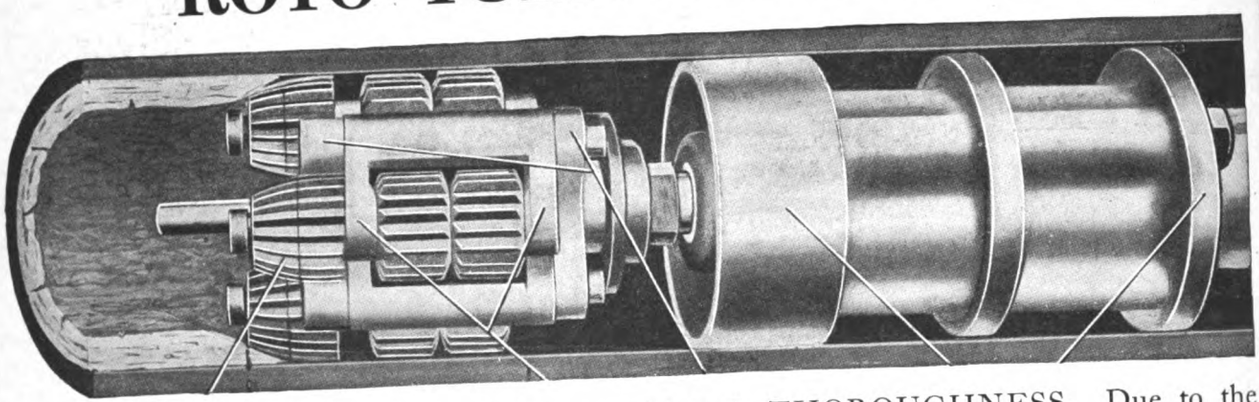
TO MAKE YOUR COAL GO FURTHER USE ROTO TUBE CLEANERS



One of the chief characteristics of these machines is THOROUGHNESS. Due to the hard armour rings of the motor which snugly fit the tube, the cleaner cannot be advanced until ALL of the scale is removed. Boilers with absolutely clean tubes consume a minimum amount of fuel.

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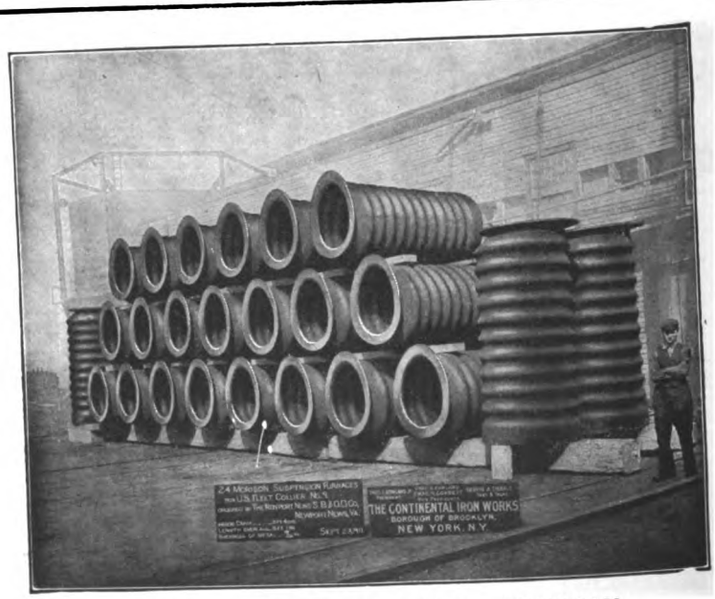

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West and Calyer Streets, Borough of Brooklyn, N. Y.

Established 1859 **Greenpoint Ferry from East 23rd Street, New York** **Incorporated 1887**

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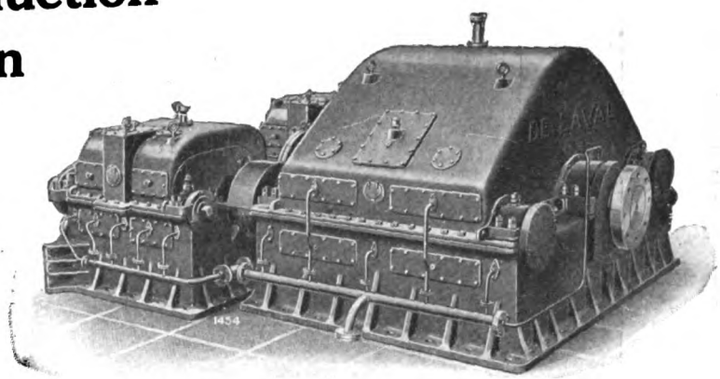
De Laval Double Reduction Gears Give Satisfaction

THE success of De Laval gears is due to our long experience in the design of such gears and our careful and painstaking methods of manufacture. De Laval gears are cut on gear cutters specially designed and built by the De Laval Company, as our experience has demonstrated that the ordinary commercial helical gear cutter will not permit the degree of accuracy necessary for high speed gears. All parts are made to limit gages and are interchangeable.



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State type and size of vessel in which you are interested, and we shall be glad to send more detailed information with our publication, M-46, and a list of vessels using De Laval Geared Turbines.

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TRENTON, NEW JERSEY

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It defines everything required in an all-purpose hoist—safety, speed, ease in handling, non-fouling chain, all steel parts, and correct design.

Wright High Speed Hoists embody Hoist-ability in its most highly developed form.

One trial will prove the point.

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WRIGHT MANUFACTURING COMPANY

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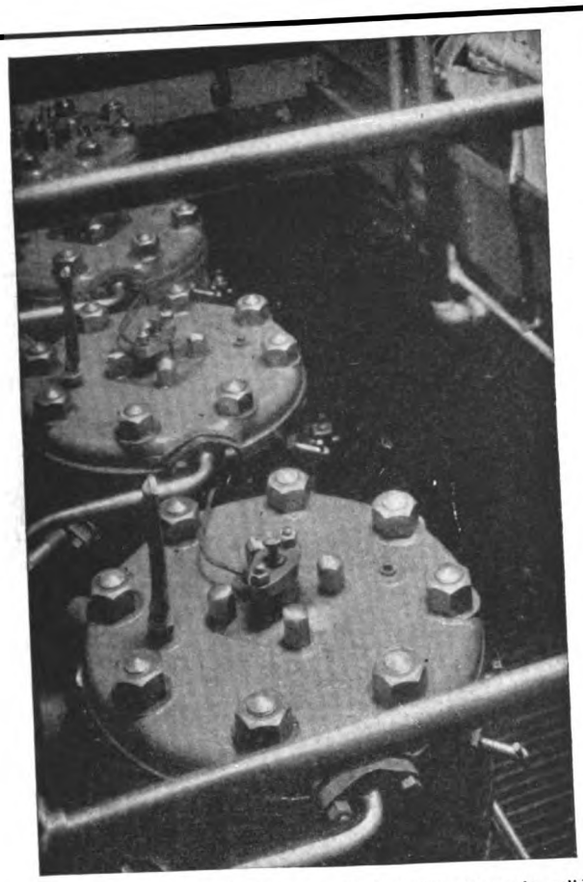

Cylinder heads of Worthington Diesel Engine, two-cycle, solid injection, installed in motor lighter Worthington.

No Moving Parts On Cylinder Heads

The photograph shows just one of the simplicity features of the Worthington Diesel Engine, two-cycle, solid injection type. The nearest moving part here is a little check valve in the fuel oil spray nozzle. Nothing on top the cylinder moves, or wears, when the engine is running.

WORTHINGTON

W 86.4

Worthington Pump and Machinery Corporation

Executive Offices

115 Broadway, New York City. Branch Offices in 24 Large Cities

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Just made by

AMERICAN MANGANESE BRONZE CO.

Holmesburg-Phila. - Pa.

S. S. Leviathan

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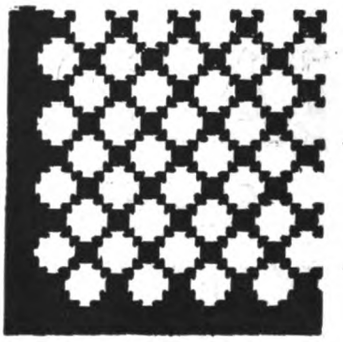

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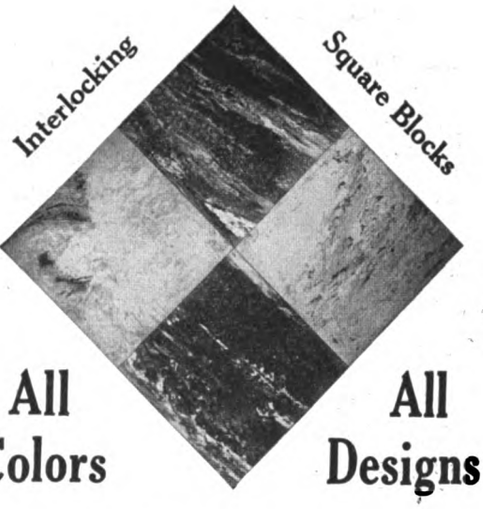

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Long experience in steel foundry practice has enabled us to develop the most efficient methods of casting each particular shape and size of fitting. This, together with the exceptional care taken in every operation, insures uniform and sound castings that give absolutely reliable service.

See Our Exhibit at the National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York, December 7th to 13th.

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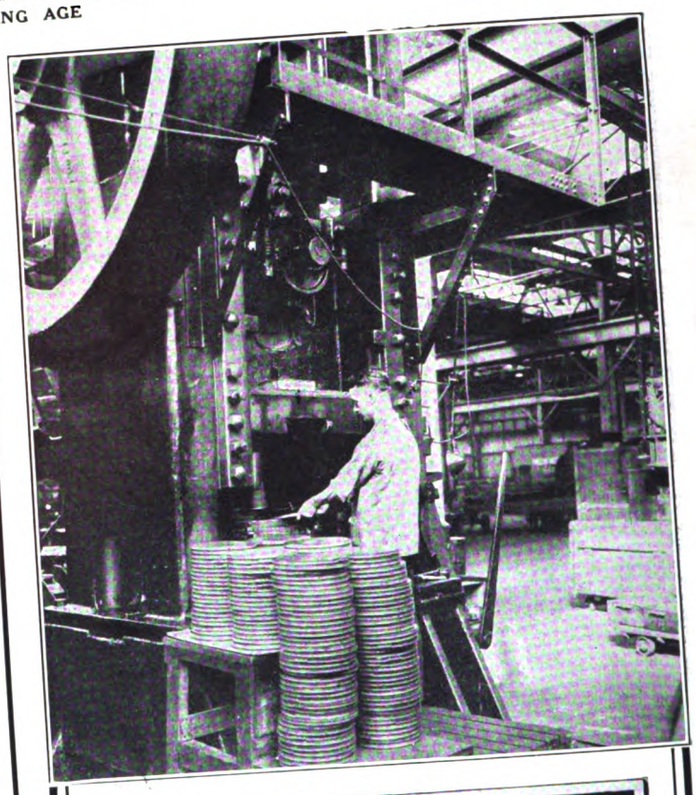

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by the Scovill Cupping Process are remarkably sound and free from defects generally found in condenser tubes made from cast shells. Note the fine close grain Mag. 75X.

Write for our booklet "Tube Facts."

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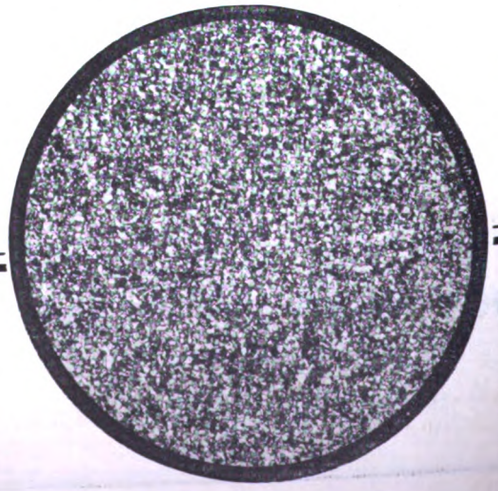

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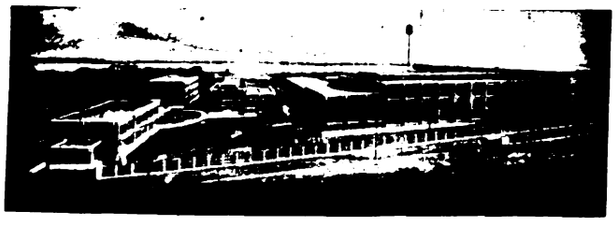
We are prepared to build 2,500 S.H.P. 4-cylinder, 2-cycle 90 R.P.M. Commercial Marine Diesels suitable for converting steamers to single screw motorships.



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NEW YORK
60 BROADWAY

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RIALTO BUILDING

Saving $1000.00 a Day

Your ship has almost reached Bahia, when the radio operator hears his call. He takes down your message:

"Do not stop at Bahia. No passengers. No cargo."

It costs at least one thousand dollars a day to hold even a steamer of moderate size in port. A few words flashed through space by radio makes a money-losing stop unnecessary.

Systematic development of wireless by the Radio Corporation of America over a period of twenty years has made it possible for shipowners to communicate with captains at sea *surely, quickly* and *inexpensively*.

Thousands of vessels are now equipped with the scientifically developed apparatus of the Radio Corporation of America. This apparatus always embodies the highest engineering skill. For behind the Radio Corporation of America stand the splendidly equipped Research Laboratories of the General Electric Company, the Westinghouse Electric and Manufacturing Company, the American Telephone and Telegraph Company, and the Western Electric Company, where, year in and year out, eminent physicists conduct investigations that result in new radio advances. No other company enjoys the benefit of this scientific research.

Our nearest office will gladly furnish you with any information desired on radio communication at sea.

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Woolworth Bldg., New York City

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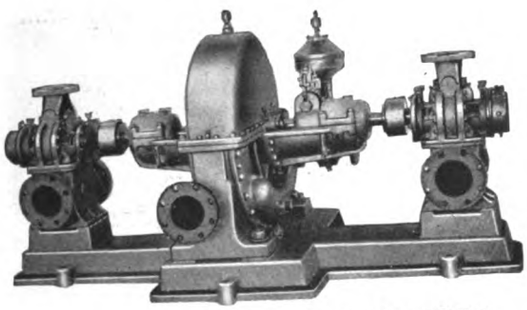
Northern Rotary Pumps For Marine Service



One of Two Dual Pump Units in Service on Steamship Leviathan. Used on Foamite Firefoam.

Small Space on Shipboard

is one of the primary features of Northern Rotary Pumps that are making them steadily more popular for marine service. In spite of the fact that these pumps deliver oils and water against pressures of 300 pounds and over, they take up surprisingly small space on board ship.

Lubricating oil service, fuel oil, boiler feed, bilge and sanitary, fresh water, standby fire, main cargo transfer,—are now common duties of these pumps on ships and shore service.

Furnished direct-shaft connected to common speed electric motors and slow-speed turbines for capacities ranging from 4 to 2,000 gallons per minute.

Write for Circular

NORTHERN ROTARY PUMPS
"MORE GALLONS PER HORSE POWER"

NORTHERN FIRE APPARATUS CO.
MINNEAPOLIS, MINNESOTA. U.S.A.

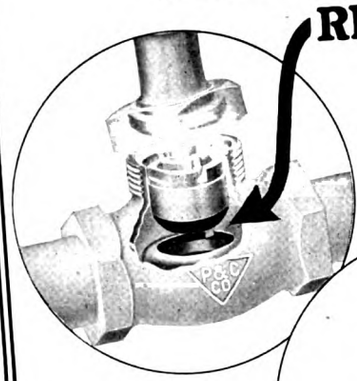
51 East 42nd St.
New York City

408 Balboa Bldg.
San Francisco, Calif.

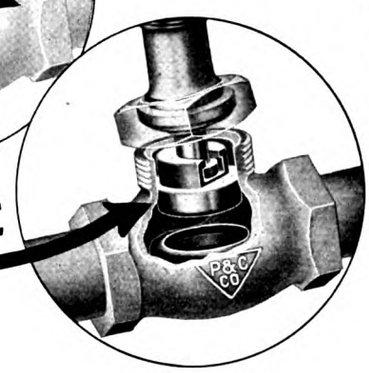
PRATT & CADY UNION BONNET VALVES

REGRINDING

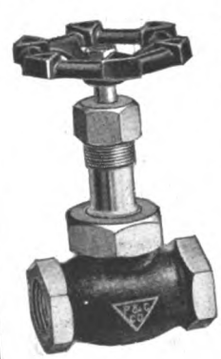
Simply insert a piece of wire or a nail through the disc lock nut and stem; then rotate the wheel until a tight joint is formed.



RENEWABLE DISC



For 150, 200, 250 and 300 lbs. steam pressure. The 150 pound valves are made with the well known P. & C. renewable asbestos disc. For the higher pressures a solid bronze regrinding disc is furnished and the discs of the 300 pound valves have a special spiral throttling lip to protect against wire drawing.



The general design includes such features as a bevel joint at the bonnet to insure tightness, large diameter spindles of manganese bronze, coarse thread on the spindle to aid quick operation and Kool Grip hand-wheels. For severe services renewable seat rings will be furnished when specified.

Our new catalogue gives complete details.

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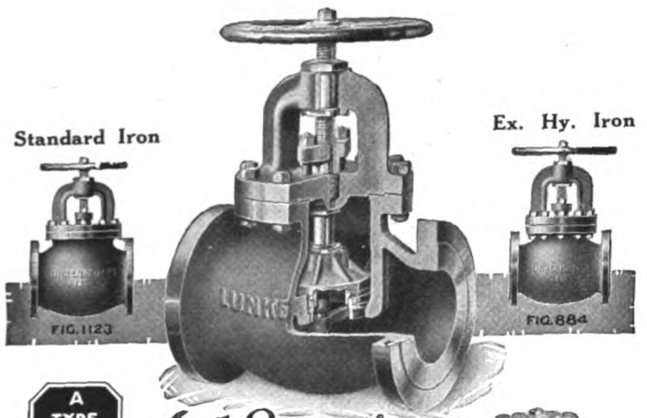

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Be it a small or large size for low or high pressures and temperatures, there is a Lunkenheimer Valve especially suited to the purpose. Every type is designed to give maximum service under extreme operating conditions, and with the line complete, standardization with its many advantages, is easily accomplished.

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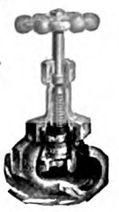

Fig. 1021
"Ferrenewo"
Iron body Renewable "Valve-Nickel" Seat and Disc

Fig. 73
"Renewo"
Bronze Body Renewable "Valve-Nickel" Seat and Disc

Fig. 606
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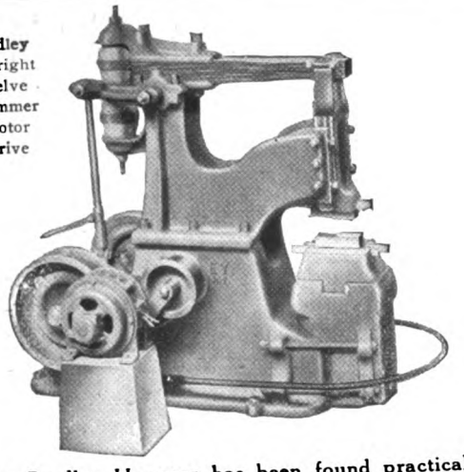

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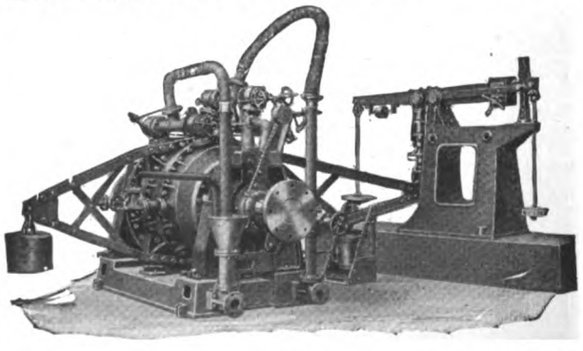

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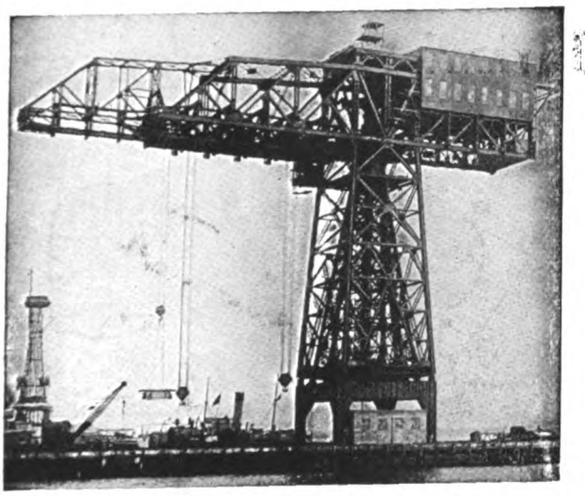
The Largest Shipbuilding Crane



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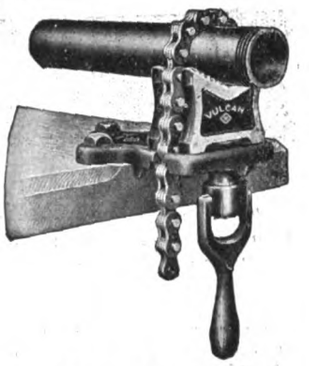

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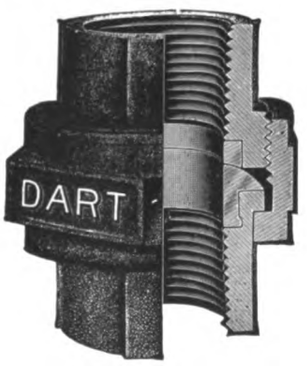

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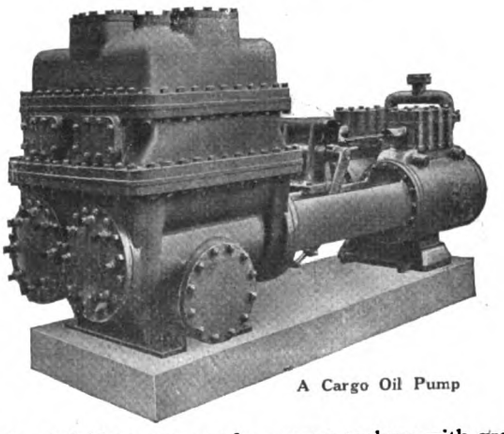

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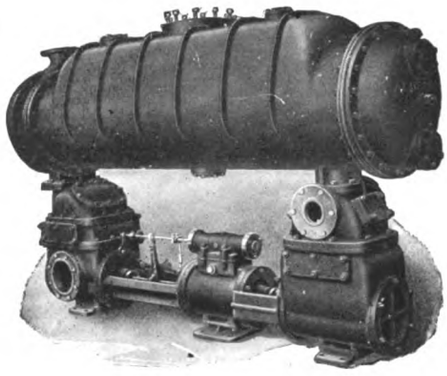

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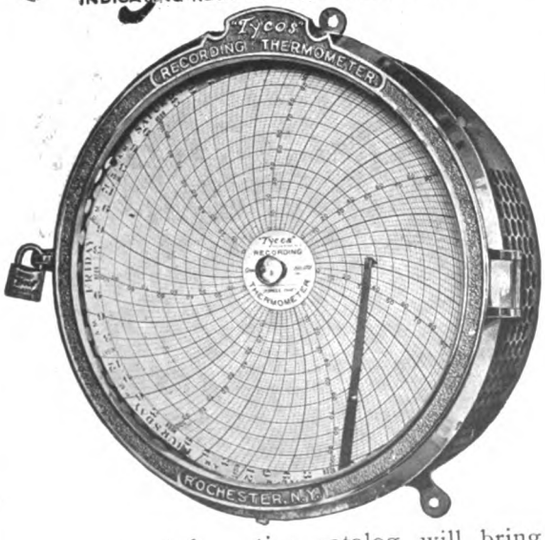

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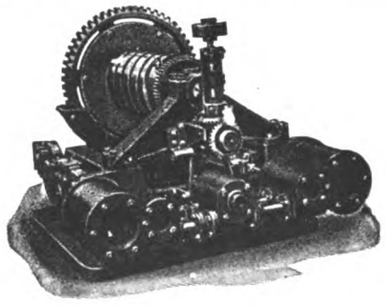

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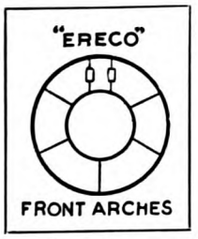

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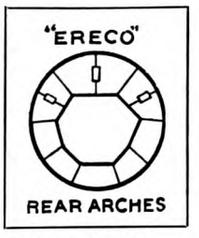

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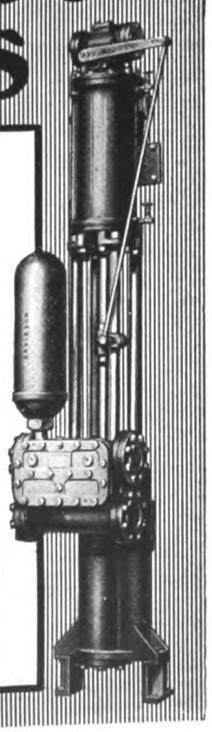

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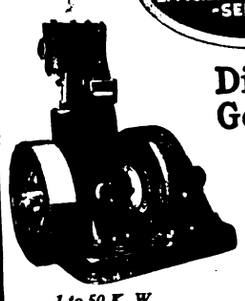

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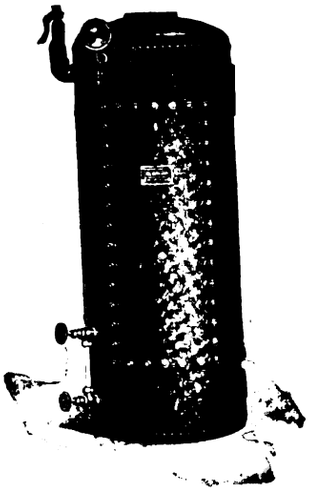

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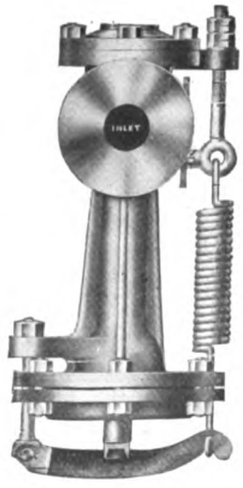

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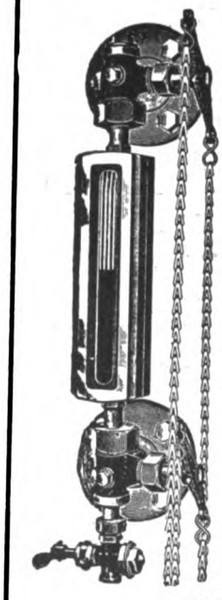

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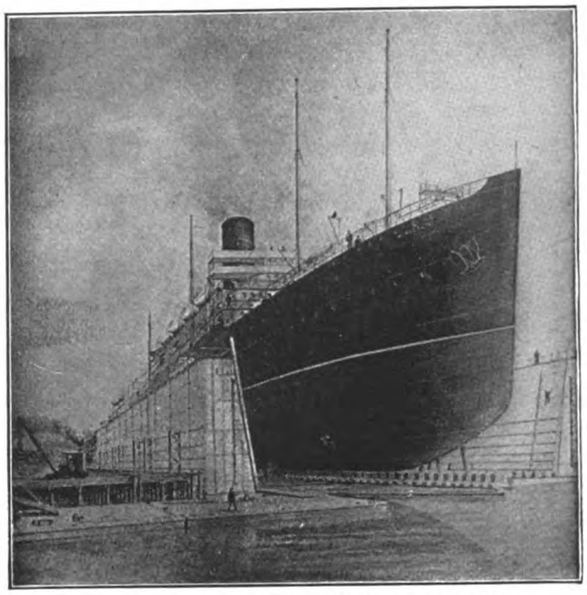

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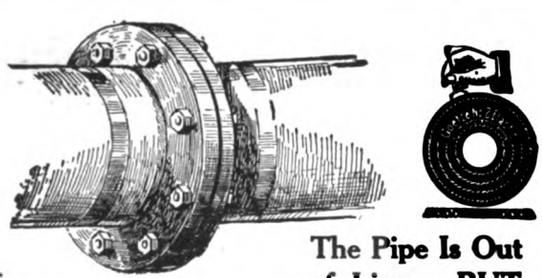

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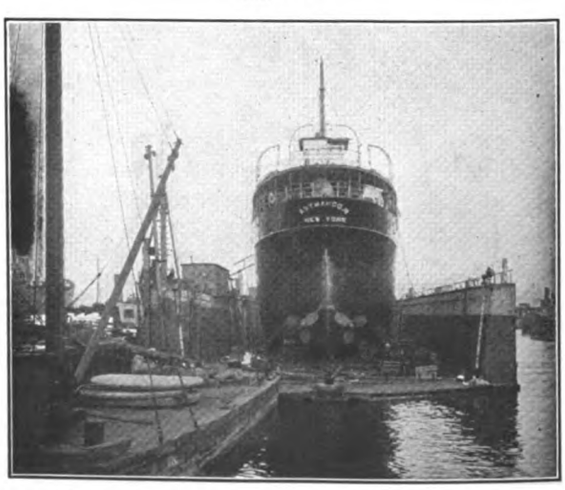

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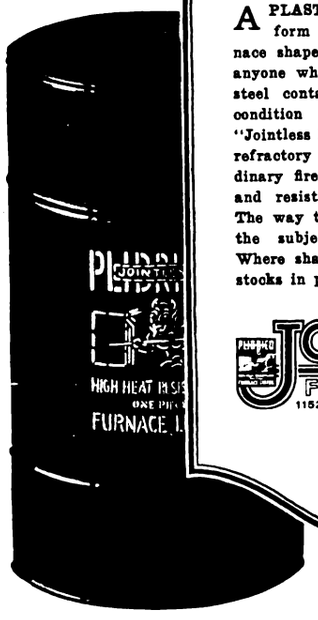

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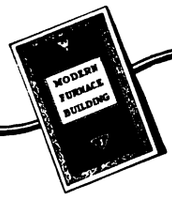

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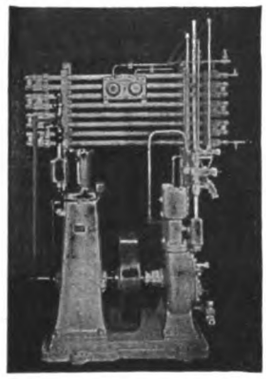

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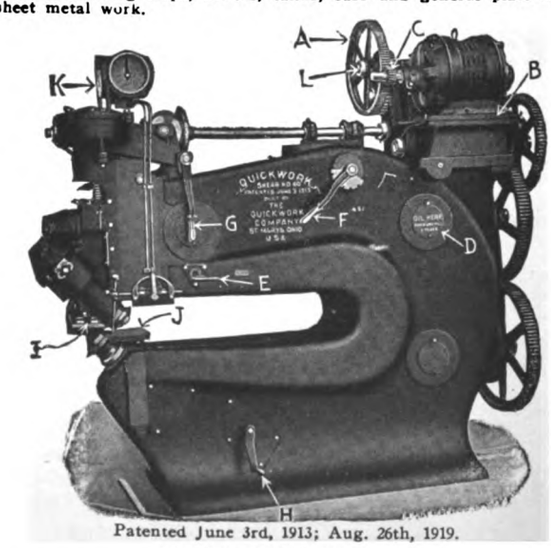

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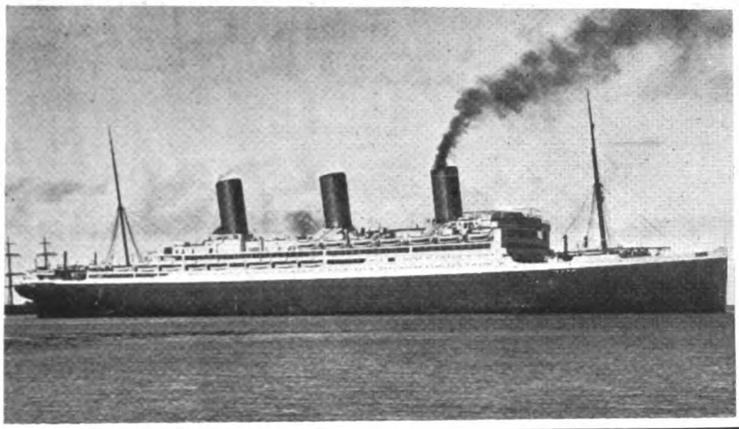

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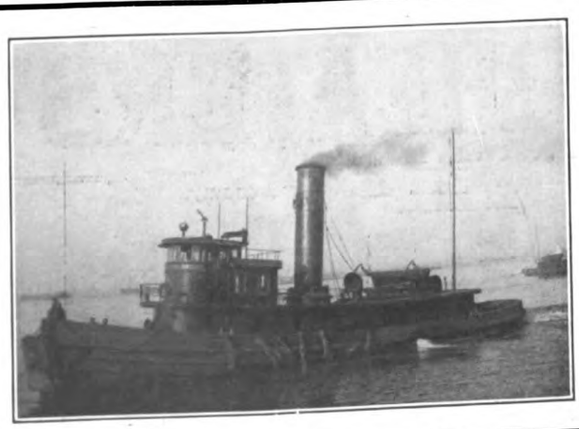

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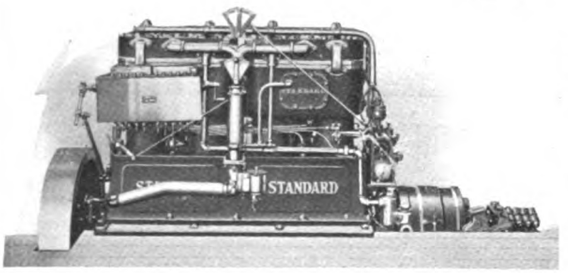

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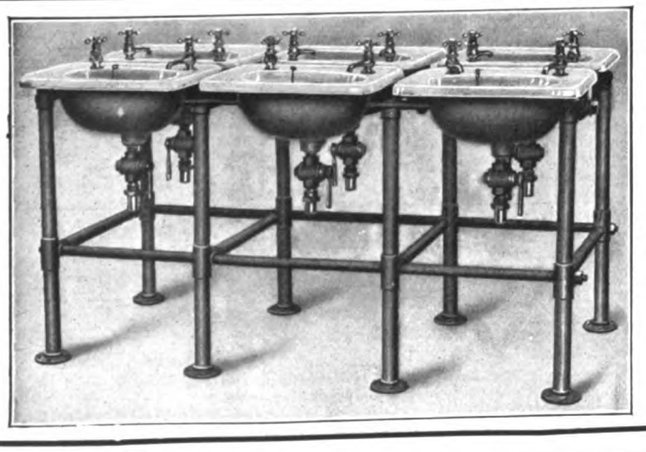

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Automatic Fire Alarms
(See Fire Alarms)

Automatic Injectors
Lunkenheimer Co., The

Automatic Towing Machines
(See Towing Machines)

Back Pressure Valves
Griscom-Russell Co.

Ballast Pumps
Davidson Co., M. T.
Ingersoll-Rand Co.
Northern Fire Apparatus Co.
Warren Steam Pump Co.
Worthington Pump & Machinery Corp.

Barges
American Bridge Co.
Charleston Dry Dock & Machine Co.
Johnson Iron Works, Dry Dock & S. B. Co., Inc.

Barge Derricks
Lidgerwood Manufacturing Co.

Barometers
Taylor Instruments Co.

Bath Pumps
Sands & Son Co., A. B.

Bath Tubs
Crane Co.
Sands, A. B., & Son Co.

Beading Machines
The Quickwork Co.

Bearings
(See Ball Bearings and Roller Bearings)

Bench Tools
Brubaker, W. L., & Cro.
Williams & Co., J. H.

Bending Rolls
(See Rolls)

Bilge Pumps
Alberger Pump & Condenser Co.
Davidson Co., M. T.
DeLaval Steam Turbine Co.
Kerr Turbine Co.
Northern Fire Apparatus Co.
Sands, A. B., & Son, Co.
Tiebout, W. & J.
Warren Steam Pump Co.
Worthington Pump & Machinery Corp.

Bitts
American Engineering Co.
Hyde Windlass Co.

Bituminous Coatings
Briggs Bituminous Composition Co., Inc.
Wailes Dove-Hermiston Corp.
Red Hand Composition Co., Inc.

Blocks
(See Chain Hoists and Blocks; also Tackle Blocks)

Blowers
(Also see Soot Blowers)
De Laval Steam Turbine Co.
General Electric Co.
Kearfott Engineering Co.
Kerr Turbine Co.
Westinghouse Electric & Mfg. Co.

Blow-Off Valves
Crane Co., The
Lunkenheimer Co., The
Powell Co., The William
Pratt & Cady Co., Inc.

Boards, Composition
Pantasote Co.

Boat Accessories
Sands, A. B., & Son Co.
Steward Davit & Equip. Corp.

Boat Builders
(See Launches and Yachts)

Boat Davits
(See Davits).

Boat Design Patents
Hullfin Boat Co., Inc.

Boat Design Licensees.
Hullfin Boat Co., Inc.

Boat Fittings
Sands, A. B., & Son, Co.
Tiebout, W. & J.

Boats
(See Life Boats; also Launches and Yachts)

Boilers
Amer. Spiral Pipe Works.
Babcock & Wilcox Co.
Bath Iron Works.
Bethlehem Shipbuilding Corp.
Charleston Dry Dock & Machine Co.
Federal Shipbuilding Co.
Foster Marine Boiler Corp.
Johnson Iron Works, Dry Dock & S. B. Co., Inc.
Hyde Windlass Co.
Kearfott Engineering Co.
Lake Erie Boiler Works.
New York Engineering Co.
Tickle Engineering Works, Arthur.
Vulcan Iron Works, Inc.
Ward, Charles, Eng. Works.

Boiler Coverings
(See Non-Conducting Coverings)

Boiler Feeders
(See Feed-water Regulators)

Boiler Feed Pumps
(See Pumps)
Alberger Pump & Condenser Co.
Davidson Co., M. T.
De Laval Steam Turbine Co.
Ingersoll-Rand Co.
Kerr Turbine Co.
Northern Fire Apparatus Co.
Warren Steam Pump Co.
Worthington Pump & Machinery Corp.

Boiler Flue Cleaners
Diamond Power Specialty Co., The
McClelland & Co., Ltd., M. E.

Boiler Gauge Glasses
(See Gauge Glasses)

Boiler Makers' Test Pumps
(See Test Pumps)

Boiler Nozzles, Welded Steel
Amer. Spiral Pipe Works
Continental Iron Works, The

Boiler Plates
(See Steel Plates)

Boiler Rivets
(See Rivets)

Boiler Riveters
(See Power Riveters)

Boiler Room Fittings
Crane Co., The
Jerguson Gage & Valve Co.
Kearfott Engineering Co.
Lunkenheimer Co., The
Powell Co., The William
Row & Davis, Engineers, Inc.

Boiler Staybolts
(See Staybolts)

Boiler, Steam and Water Drums, Welded
Continental Iron Works, The

Boiler Tube Cleaners
Roto Co., The

Boiler Tubes
American Spiral Pipe Works.
Federal Shipbuilding Co.
Kearfott Engineering Co.
National Tube Co.
Parkesburg Iron Co.

Books—Shipbuilding
Simmons-Boardman Pub. Co.

Booms—Tubular Steel
National Tube Co.

Boring Bars
(See Cylinder Boring Bars)

Boring Machines—Metal Working
Ingersoll-Rand Co.

Boring Machines—Wood
Chicago Pneumatic Tool Co.
Cleveland Pneumatic Tool Co.
Ingersoll-Rand Co.

Brazing Materials.
Smooth-On Mfg. Co.

Brass and Copper
American Brass Co.
Chase Metal Works
Chase Rolling Mill Co.
Sands, A. B., & Son Co.
Scovill Mfg. Co.

Brass Castings
(See Castings—Brass)

Brass Fittings
American Brass Co.
Chase Rolling Mill Co.
Crane Company, The
Lunkenheimer Co., The
Powell Co., The William
Sands, A. B. & Sons Co.
Scovill Mfg. Co.
Tiebout, W. & J.

Brick
(See Fire Brick)

Bridge Control
Westinghouse Electric & Mfg. Co.

Bridge Walls
(See Furnace Bridge Walls)

Brokers
(See Ship Brokers)

Bronze
American Brass Co.
American Manganese Bronze Co.
Chase Metal Works
Chase Rolling Mill Co.
Columbian Bronze Corp.
Crane Co.
Lunkenheimer Co.
Powell Co., The William
Scovill Mfg. Co.

Bulkheads, Plymetl.
Haskelite Mfg. Corp.

Burners, Fuel Oil
(See Fuel Oil Burners)

Bushings
Crane Co., The
Lunkenheimer Co., The

By-Pass Valves
Crane Co., The
Griscom-Russell Co.
Lunkenheimer Co., The
Powell Co., The William
Pratt & Cady Co.

Cables
(See Chain; also Rope)
American Brass Co.

Cableways
(See Marine Cableways)

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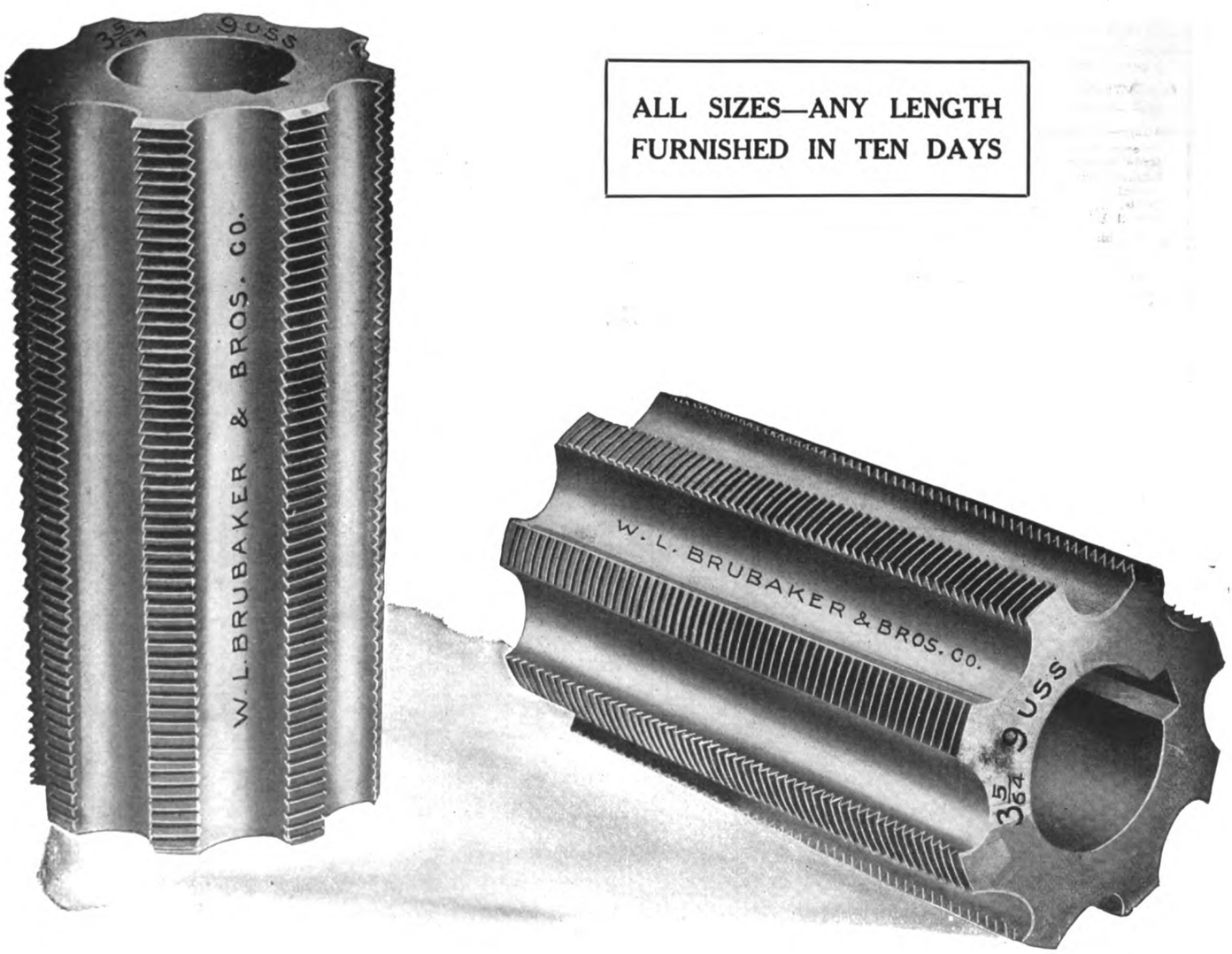

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Caliper Gauges
Williams & Co., J. H.

Calking Machinery
Ingersoll-Rand Co.

Capstans
(Steam, Electric, Hand)
American Engineering Co.
Bethlehem Shipbldg. Corp.
Hadfield-Penfield Steel Co.
Hyde Windlass Co.

Carbon Dioxide Valves and Fittings
Brunswick Refrigerating Co.
Frick Co.
York Manufacturing Co.

Carbon Dioxide Machine
Brunswick Refrigerating Co.
Frick Co.
York Manufacturing Co.

Car Dumpers
McMyler Interstate Co.

Car Floats
American Bridge Co.

Cargo Hoists
(See Hoisting Engines)

Cargo Lights
General Electric Co.

Cargo Pumps
Northern Fire Apparatus Co.

Cargo Winches
(See Winches)

Castings—Aluminum
Griscom-Russell Co.
Hyde Windlass Co.
Lunkenheimer Co., The
Powell Co., The William
Sands, A. B., & Son Co.
Scovill Mfg. Co.

Castings—Brass
Charleston Dry Dock & Machine Co.
Crane Co.
Griscom-Russell Co.
Hyde Windlass Co.
Lunkenheimer Co., The
Powell Co., The William
Sands, A. B., & Son Co.
Scovill Mfg. Co.
Tiebout, W. & J.

Casting—Bronze
American Manganese Bronze Co.
American Steel Foundries
Charleston Dry Dock & Machine Co.
Chase Metal Works
Chase Rolling Mill Co.
Columbian Bronze Co.
Crane Co., The
Ferguson-Herbert Corp'n
Lunkenheimer Co., The
Powell Co., The William
Sands, A. B., & Son Co.
Scovill Mfg. Co.
Tiebout, W. & J.

Castings—Brass and Bronze
Bath Iron Works

Castings—Gray Iron
Ferguson-Herbert Corpn.

Castings—Steel
American Steel Foundries
Bethlehem Shipbldg. Corp.
Chase Metal Works
Chase Rolling Mill Co.
Crane Co., The
Griscom-Russell Co.
Hyde Windlass Co.
Lunkenheimer Co., The
Sands, A. B., & Son Co.

Ceilings
(Cabin)
Marine Decking & Supply Co.

Centrifugal Oil Purifiers
De Laval Separator Co.

Centrifugal Pumps
Alberger Pump & Condenser Co.
Ingersoll-Rand Co.
Kearfott Engineering Co.
Kerr Turbine Co.
Westinghouse Electric & Mfg. Co.
Wheeler Manufacturing Co.
Worthington Pump & Machinery Corp.

Chain
National Malleable Castings Co., The
Kearfott Engineering Co.

Chain Hoists and Blocks
Union Hardware Co.
Wright Mfg. Co.

Chain Pipe Wrenches
American Engineering Co.
Williams Co., J. H.

Chain Stoppers
American Engineering Co.

Chain Valve Wheels
Lunkenheimer Co., The
Powell Co., The William

Charcoal Iron Boiler Tubes
Kearfott Engineering Co.
Parkesburg Iron Co.

Check Valves—Brass and Iron
Crane Co., The
Lunkenheimer Co., The
Powell Co., The William
Pratt & Cady Co., Inc.
Sands & Son Co., A. B.

Chemicals
(See Boiler Compounds)

Chipping Hammers
(See Pneumatic Tools)

Chisel Blanks
Cleveland Pneumatic Tool Co., The
Ingersoll-Rand Co.

Chocks
American Engineering Co.

Chock Fittings
Steward Davit and Equip. Corp.

Chucks
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.

Circular Shears
The Quickwork Co.

Circulating Pumps
Alberger Pump & Condenser Co.
Davidson Company, M. T.
De Laval Steam Turbine Co.
Ingersoll-Rand Co.
Warren Steam Pump Co.
Westinghouse Electric & Mfg. Co.
Wheeler Mfg. Co., C. H.
Worthington Pump & Machinery Corp.

Circulators
(See Boiler Circulators)

Clamps—Machinists and Tool Makers
Williams & Co., J. H.

Cleaners, Boiler Flue
McClelland, N. E.

Clocks
McNab Co., The

Coal-Handling Machinery
Lidgerwood Mfg. Co.
McMyler Interstate Co.
Shepard Electric Crane & Hoist Co.

Coatings
(See Anti-Rust Coatings)

Cocks
(See Gauge Cocks)

Combined Air and Circulating Pumps
Wheeler Mfg. Co.

Companion Flanges
Crane Co., The
Lunkenheimer Co., The
Powell Co., The William

Compositions
(See Ship's Compositions)

Compounds
(See Boiler Compounds)
(See Rust Cutting and Removing Fluid)

Compression Riveters
(See Power Riveters)

Condensers
Alberger Pump & Condenser Co.
American Engineering Co.
Bath Iron Works
Davidson Co., M. T.
Griscom-Russell Co.
Ingersoll-Rand Co.
Kearfott Engineering Co.
Row & Davis, Engineers, Inc.
Warren Steam Pump Co.
Westinghouse Electric & Mfg. Co.
Wheeler Mfg. Co., C. H.
Worthington Pump & Machinery Corp.

Condenser Tubes
American Brass Co.
Chase Metal Works
Chase Rolling Mill Co.
Kearfott Engineering Co.
Scovill Mfg. Co.

Connecting Rods
Williams & Co., J. H.

Consulting Engineers
(See Engineers, Consulting)

Conveying Machinery
Lidgerwood Mfg. Co.
McMyler Interstate Co.

Conveyors (Coal)
(See Conveying Machinery)

CO_2 Ice Machines
(See Conveying Dioxide Machines)

Coolers—Oil Coppers
(See Oil Coolers)

Copper
(See Brass and Copper)

Copper Tubes, Rods, Wires
Chase Metal Works
Chase Rolling Mill Co.
Scovill Mfg. Co.

Cordage
(Also see Rope and Wire Rope; also Twine)
Columbian Rope Co.
Griscom-Russell Co.
Plymouth Cordage Co.

Corrugated Furnaces
Continental Iron Works, The

Couplings
(See Hose Couplings)

Coverings—Non-Conducting
(See Non-conducting Coverings)

Coverings, Composition Floor,
Coffey Eng. Corp., The J. A.
Marine Decking.

Cranes
(Also see Floating Cranes and Shipyards Whirlers)
American Engineering Co.
McMyler Interstate Co.
Shepard Electric Crane & Hoist Co.

Crank Shafts
Williams & Co., J. H.

Curtains and Fixtures,
Pantasote Co., The

Cutting and Welding
(See Welding)

Cyclopedias—Shipbuilding
Simmons-Boardman Pub. Co.

Cylinder Boring Bars
Williams & Co., J. H.

Cylinder Relief Valves
(See Valves)

Cylinders for Compressed Air, Gas, Etc.
Continental Iron Works, The
National Tube Co.

Davits
Stewart Davit & Equip. Corp.

Deck Fittings
Steward Davit & Equip. Corp.

Deck Plates
Sands & Son. A. B.

Deck Pumps
Sands & Son Co., A. B.
Warren Steam Pump Co.

Decking
Beaver Tile Co.
Briggs Bituminous Composition Co.
J. A. Coffey Eng. Corp.
Marine Decking & Supply Co.

Derricks
Lidgerwood Mfg. Co.
McMyler Interstate Co.

Derrick Cars
McMyler Interstate Co.

Derrick Irons
Lidgerwood Mfg. Co.

Detaching Gear (Boat)
Steward Davit & Equip. Corp.

Detectors, Elec. Salinity
Babcock & Wilcox Co., The

Diaphragm Pumps
Hyde Windlass Co.

Dies
Brubaker & Bros., W. L.

Diesel Engines
(Also see Engines, Oil)
American-Krupp System Diesel Engine Co.
Burmeister & Wain, Ltd.
Busch-Sulzer Bros. Diesel Engine Co.
Hadfield-Penfield Steel Co.
Kearfott Engineering Co.
McIntosh & Seymour Corp.
Winton Engine Works
Worthington Pump & Machinery Corp.

Direct-Connected Sets
(See Electrical Plants)

Disengaging Gears
Steward Davit & Equip. Corp.

Distillers
(See Evaporators)

Draft Gages
Pneumercator Co.

Drain Valves
(See Valves)

Drawing Materials
(Board, Cloth, Paper, Ink, Etc.)

Dredging Machinery
American Engineering Co.
Lidgerwood Mfg. Co.
McClelland, N. E.
McMyler Interstate Co.
McClelland & Co., Ltd., M. E.

Dredging Pumps
Worthington Pump & Machinery Corp.

Drills, Electric
(See Electric Drills)

Drills, Pneumatic
(See Pneumatic Tools)

Drills, Portable
(See Portable Drills)

Drills, Wall Radial
(See Radial Drills)

Drop Forgings
(Eye Bolts, Wrenches, Etc.)
Williams & Co., J. H.

Drop Hammers
Chambersburg Engineering Co.

Dry Dock Pumps
Alberger Pump & Condenser Co.
Worthington Pump & Machinery Corp.

Dry Docks
(Manufacturer and Marine Railways)
Bethlehem Shipbldg. Corp.
Crandall Engineering Co.
Federal Shipbuilding Co.

Dry Docks and Marine Railways
Bethlehem Shipbuilding Corp., Ltd.
Charleston Dry Dock & Machine Co.
Federal Shipbuilding Co.
Merchant Shipbuilding Corp.
Pensacola Shipbuilding Co.
Sun Shipbuilding Co.
Todd Shipyards Corp.

Dynamometers
Wheeler Mfg. Co., C. H.

Dynamos
(See Electric Plants)

Economizer, Fuel
(See Fuel Economizer)

Ejectors
Lunkenheimer Co.

Electric Cutouts
General Electric Co.

Electric Cranes
(See Electric Hoists)

Electric Drills and Grinders
Chicago Pneumatic Tool Co.
General Electric Co.

Electric Driven Pumps
Alberger Pump & Condenser Co.
Ingersoll-Rand Co.

Electric Freight Trucks
(See Freight-Handling)

Electric Fire Alarm Systems

Electric Heaters
General Electric Co.

Electric Hoists
American Engineering Co.
Chicago Pneumatic Tool Co.
General Electric Co.
Hyde Windlass Co.
Lidgerwood Mfg. Co.
Shepard Elec. Crane & Hoist Co.

Electric Lighting
General Electric Co.

Electric Meters
(See Meters, Electric)

Electric Plants
General Electric Co.
Kerr Turbine Co.
Westinghouse Electric & Mfg. Co.

Electric Pumps
(See Electric Drives Pumps)

Electric Welding
(See Welding, Electric)

Electrical Appliances, Installations, Fittings and Supplies

Electrical Instruments
General Electric Co.

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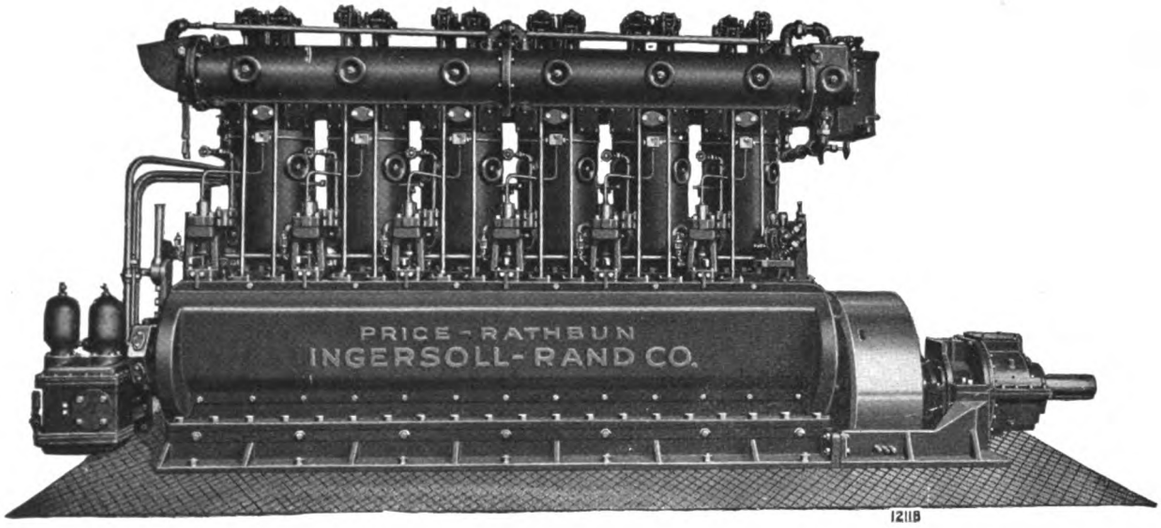

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Elevators, Air and Hydraulic
(Also see Portable Elevators)

Engine Generating Sets.
General Electric Co.

Engine Oil
(See Lubricants)

Engine Packing
(See Packing)

Engine Room Counters
(See Revolution Counters)

Engineers, Consulting—Marine
American Engineering Co.
Bogert, J. L.
Bonner, William T.
Chapman & Fisher
Christensen & Snethlage
Crandall Engineering Co.
Donnelly, W. T.
Ferris, Theodore
Griffin & Cathcart
Haag, A. H.
Haight, Robert S.
Matthews, John B.
McClelland & Co., N. B., Ltd.
Russell & Thayer
Row & Davis, Engineers, Inc.
Sharp, Geo. G.
Tickle Engineering Works, Arthur
Watts, J. Murray
Whittelsey & Whittelsey

Engines for Auxiliaries
De Laval Steam Turbine Co.
Hyde Windlass Co.
Kearfott Engineering Co.
Kerr Turbine Co.
McIntosh & Seymour Corp.
Westinghouse Electric & Mfg. Co.

Engines, Gasoline
(See Gasoline Engines)

Engines, Hoisting
(See Hoisting Engines)

Engines, Kerosene
(See Kerosene Engines)

Engines, Oil
(Also see Diesel Engines)
American-Krupp System Diesel Engine Co.
Burmeister & Wain, Ltd.
Busch-Sulzer Bros. Diesel Engine Co.
Chicago Pneumatic Tool Co.
Hadfield-Penfield Steel Co.
Ingersoll-Rand Co.
Johnson Iron Works, Ltd.
Kearfott Engineering Co.
McIntosh & Seymour Corp.
New London Ship & Engine Co.
Standard Motor Construction Co.
Winton Engine Co.
Worthington Pump & Machinery Corp.

Engines, Propelling
Bath Iron Works
Bethlehem Shipbuilding Corp.
Hadfield-Penfield Steel Co.
Ingersoll-Rand Co.
Kearfott Engineering Co.
McIntosh & Seymour Corp.
Standard Motor Construction Co.
Trout Co., H. G.
Ward, Chas., Engineering Works
Winton Engine Co.
Worthington Pump & Machinery Corp.

Engines, Pumping
Alberger Pump & Condenser Co.
Davidson Co., M. T.
Exeter Machine Works.
Griscom-Russell Co.
Kearfott Engineering Co.
Row & Davis, Engineers, Inc.
Worthington Pump & Machinery Corp.

Engine-Room Clocks
(See Clocks)

Engine-Room Supplies
(See Steam Specialties)

Evaporators
American Engineering Co.
Davidson Co., M. T.
Griscom-Russell Co.
Kearfott Engineering Co.
Row & Davis, Engineers, Inc.

Exhaust Fans
(See Blowers)

Expanders
(See Boiler Flue Expanders and Pipe Expanding and Flanging Machines)

Expansion Joints
Alberger Pump & Condenser Co.
Crane Co., The
Griscom-Russell Co.
Lunkenheimer Co.
Powell Co., The William

Eye Bolts
Williams & Co., J. H.

Fans, Bracket
General Electric Co.

Feed Water Heaters
Alberger Pump & Condenser Co.
Griscom-Russell Co.
Kearfott Engineering Co.
Pratt & Cady Co., Inc.
Row & Davis, Engineers, Inc.
Worthington Pump & Machinery Corp.

Feed Water Regulators
Jerguson Gage & Valve Co.
Kearfott Engineering Co.

Fences
(See Wire Fences)

Ferrules—Condenser Tube
(See Condenser Tube Ferrules)

Filters, Feed Water
Griscom-Russell Co.

Filters—Marine Oil
Griscom-Russell Co.
Kearfott Engineering Co.
Row & Davis, Engineers, Inc.

Fire Bricks
Jointless Fire Brick Co.

Fire Hose
(See Hose)

Fireproof Lumber
(See Lumber, Fireproof)

Fire Pumps
Alberger Pump & Condenser Co.
Warren Steam Pump Co.
Worthington Pump & Machinery Corp.

Fittings, Cast Steel
Reading Valve & Fittings Co.

Fixtures, Plumbing
Sands & Son Co., A. B.

Flanges
Amer. Spiral Pipe Works
Crane Co., The
Lunkenheimer Co., The

Flanging Machines
Williams Co., J. H.

Floating Cranes
(Also see Cranes)
McMyler-Interstate Co.

Float Valves
Crane Co., The
Lunkenheimer Co., The

Floating Dry Docks
(See Dry Docks)

Floor Plates
Crane Co., The

Flue Cleaners
(See Boiler Flue Cleaners)

Flue Cutters
(See Boiler Flue Cutters)

Forced Draft
(See also Blowers)
De Laval Steam Turbine Co.
General Electric Co.
Kearfott Engineering Co.
Kerr Turbine Co.

Forges
C. C. Bradley & Son

Forgings, Bronze
Hyde Windlass Co.
Tickle Engineering Works, Arthur

Forgings—Drop
(See Drop Forgings)

Forgings, Iron and Steel
(Also see Drop Forgings)
Charleston Dry Dock & Machine Co.

Freight-Handling Equipment
General Electric Co.
Lidgerwood Mfg. Co.
McMyler Interstate Co.
Shepard Electric Crane & Hoist Co.

Fuel Economizer
Griscom-Russell Co.

Fuel Oil Burners
Bethlehem Shipbuilding Corp., Ltd.
Babcock & Wilcox Co.
Peabody Engineering Co.
Schulte & Koerting Co.
White Fuel Oil Engineering Corp.

Fuel Oil Heaters
Alberger Pump & Condenser Co.
Griscom-Russell Co.

Fuel Oil Pumps
Davidson Co., M. T.
Warren Steam Pump Co.

Furnace Bridge Walls
Egan Ref. Eng. Co., Inc., T. G.
Ferguson-Herbert Corp'n

Furnace Fronts
Continental Iron Works, The

Furnaces
(Also see Oil Furnaces)
Amer. Spiral Pipe Works
Continental Iron Works, The

Fusible Plugs
Crane Co., The
Griscom-Russell Co.
Lunkenheimer Co., the

Galley Pumps
Sands & Son, Co., A. B.

Galleys
(See Ranges)

Galvanized Material
Sands, A. B., & Son Co.
Tiebout, W. & J.

Gas Engine Specialties
Crane Co., The
Lunkenheimer Co., The
Powell Co., The William

Gaskets
(Also see Packing)
Crane Co., The
Goetze Gasket & Packing Co.
Griscom-Russell Co.
Mustor Mfg. Co.
Smooth-On Mfg. Co.

Gasoline Engines
Standard Motor Construction Co.
Winton Engine Co.

Gasoline Pumps
Sands & Son Co., A. B.
Worthington Pump & Machinery Corp.

Gate Valves — Brass and Iron
Crane Co., The
Lunkenheimer Co., The
Pratt & Cady Co., Inc.
Powell Co., The William
Reading Valve & Fittings Co.

Gate Valves for Tank Steamers
Pratt & Cady Co., Inc.

Gage, Air Pressure
Peabody Engineering Co.

Gage Cocks
Jerguson Gage & Valve Co.
Lunkenheimer Co., The
Powell Co., The William
Sands & Son Co., A. B.

Gage Glasses
Crane Co, The
Jerguson Gage & Valve Co.
Lunkenheimer Co., The
Powell Co., The William

Gages
(See Draft Gauges; also Tank Gauges)

Gages—Manufacturers'
(Also see Steam Gauges)

Gages, Steam, Pressure
Ashton Valve Co., The

Gears
De Laval Steam Turbine Co.
Falk Corp., The
Kerr Turbine Co.
Westinghouse Electric & Mfg. Co.

General Welding and Cutting Equipment
(See Welding & Cutting Apparatus and Supplies)

Generating Sets
Engberg's Electric & Mechanical Wks.
General Electric Co.
Kerr Turbine Co.
Westinghouse Electric & Mfg. Co.
Worthington Pump & Machinery Corp.

Generators, Elec.
Diehl Mfg. Co.
General Electric Co.
Engberg's Electric & Mechanical Wks.

Globe Valves—Brass and Iron
Crane Co., The
Lunkenheimer Co., The
Powell Co., The William
Pratt & Cady Co., Inc.

Governor Valves
Atlas Valve Co.
Crane Co., The
Lunkenheimer Co., The

Governors, Pump
Atlas Valve Co.

Grate Bars
Ferguson-Herbert Corp'n

Grease
(See Lubricants)

Grease Cups
Crane Co., The
Lunkenheimer Co., The
Powell Co., The William

Grease Extractors
Griscom-Russell Co.
Row & Davis, Engineers, Inc.

Grinders—Electric and Pneumatic
Chicago Pneumatic Tool Co.
Cleveland Pneumatic Tool Co., The

Gypseys
American Engineering Co.
Hyde Windlass Co.
Lidgerwood Mfg. Co.

Hammers
Bradley & Son, C. C.
Quickwork Co.

Hammers, Pneumatic
(See Pneumatic Tools)

Hammocks
(See Couch Hammocks)

Handles (Crank, Balance, Machine)
Williams & Co., J. H.

Hardware
(See Marine Hardware)

Hardwood
(See Lumber)

Hawse Pipes
Ferguson-Herbert Corp'n

Hawsers—Manila
(Also see Rope and Wire Rope)
Columbian Rope Co.
Plymouth Cordage Co.

Heaters
(Bath, Lavatory, Shower)
Alberger Pump & Condenser Co.
Griscom-Russell Co.
Kearfott Engineering Co.
Pratt & Cady Co., Inc.
Sands & Son Co., A. B.

Heaters, F. O.
Griscom-Russell Co.

Heating and Ventilating Equipment.

Hemp
(See Twine)

Hoist Hooks
Williams, J. H., & Co.

Hoisting Engines
American Engineering Co.
Hadfield-Penfield Steel Co.
Hyde Windlass Co.
Lidgerwood Mfg. Co.

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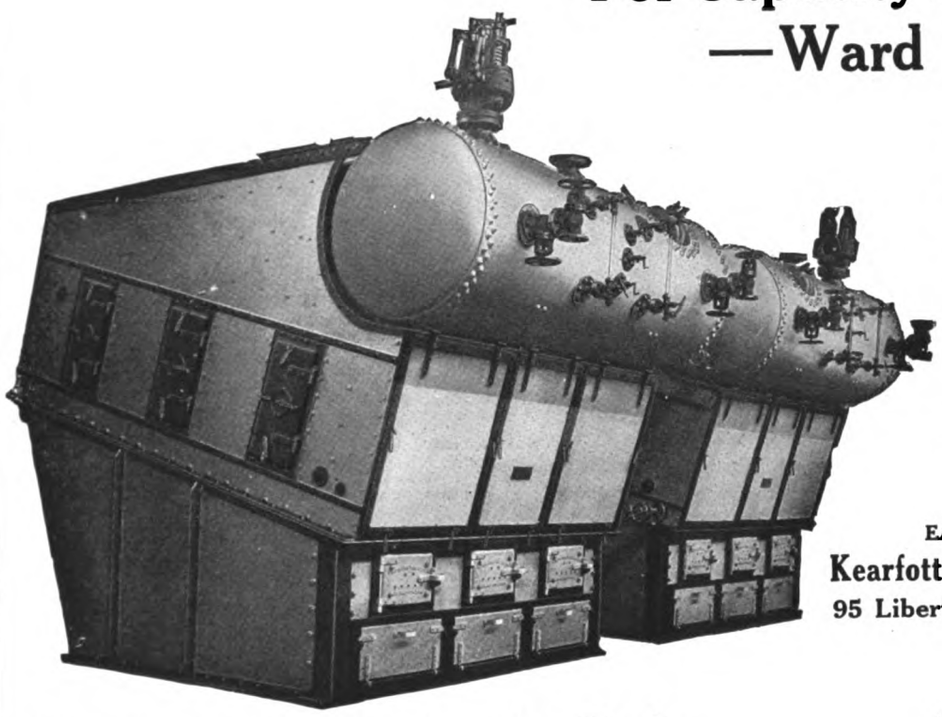

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Hoisting and Transmission Rope
(See Rope)

Hoists, Chain
(See Chain Hoists)

Hoists, Electric
(See Electric Hoists)

Holders-On
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.

Horizontal Punches
Cleveland Punch & Shear Works Co.

Hose
(Also see Air Hose)
Chicago Pneumatic Tool Co.
Cleveland Pneumatic Tool Co., The
Ingersoll-Rand Co.
Mustor Mfg. Co.

Hose Coupling
Chicago Pneumatic Tool Co.
Cleveland Pneumatic Tool Co.
Ingersoll-Rand Co.
McClelland & Co., Ltd., M. E.
Mustor Mfg. Co.

Humidifiers
Griscom-Russell Co.

Hydraulic Fittings
Crane Co., The
Lunkenheimer Co.
Powell Co., The William
Reading Valve & Fittings Co.

Hydraulic Presses and Other Machinery
Warren Steam Pump Co.

Hydrometers
Taylor Instruments Co.

Hygrodeiks
Taylor Instruments Co.

Hydrostats
Atlas Valve Co.

Ice Machines
(See Refrigerating Machinery)

Indicator Connections
Lunkenheimer Co.
Powell Co., The William

Indicators
(Steam and Gas Engine)
Lunkenheimer Co., The
Powell Co., The William

Injectors
Lunkenheimer Co., The
Powell Co., The William

Interlocking Rubber Tiling
Griscom-Russell Co.
Mustor Mfg. Co.

Iron Pipe
(See Pipe)

Jacks—Steamboat Ratchet (Pulling)
Griscom-Russell Co.

Journal Bearings
(See Thrust Bearings)

Jute
Columbian Rope Co.

Kerosene Engines
Standard Motor Construction Co.

Lamps, Signals and Fixtures
General Electric Co.
Sands, A. B. & Son Co.
Westinghouse Electric & Mfg. Co.

Lathe Dogs
Williams & Co., J. H.

Launches and Yachts
(See shipbuilders)

Lavatories
(Stateroom)
Crane Co., The
Sands, A. B., & Son Co.

Lavatory and Bath Heaters
Griscom-Russell Co.
Sands, A. B., & Son Co.

Lead, Blue
Eagle-Pitcher Lead Co., The

Licensees, Boat Design.
Hullfin Boat Co., Inc.

Life Boats and Rafts
American Bolsa Co.
Steward Davit & Equip. Corp.

Life-Saving Devices
Steward Davit & Equip. Corp.

Lighting Sets
(See Electric Plants)

Lights, Electric
(See Electric Lights)

Lines—Towing, Buoy
(See Rope)

Loading and Unloading Equipment
(See Freight-Handling Equipment)

Locks and Latches
(See Ship Locks and Latches)

Locomotive Cranes
(See Cranes)

Log Registers
Steward Davit & Equip. Corp.

Lubricating Oil Pumps
Warren Steam Pump Co.

Lubricators
Crane Co.
Griscom-Russell Co.
Lunkenheimer Co.
Powell Co., The William

Lumber
Orr Co., John C.
McKenna, Inc., J. F.

Machine Tools
Cleveland Pneumatic Tool Co.

Machines, Crimping
Quickwork Co., The

Machinists' Tools
Williams & Co., J. H.

Manganese Bronze Castings
American Manganese Bronze Co.
Columbian Bronze Corp.
Griscom-Russell Co.
Hyde Windlass Co.
Lunkenheimer Co.
Powell Co., The William

Malleable and Steel Castings
Crane Co.

Manila and Sisal Rope
(See Rope)

Manifolds
Cleveland Pneumatic Tool Co.

Manufacturing Plants
(See Builders)

Marine Boiler Heads
(See Boiler Heads)

Marine Cableways
Lidgerwood Mfg. Co.

Marine Coatings
(See Anti-Rust Coatings)

Marine Decking
(See Decking)

Marine Electrical Equipment
(See Electrical Fittings and Supplies)

Marine Engines
(See Engines, Propelling)

Marine Engineers
(See Engineers, Consulting)

Marine Forgings
(See Forgings)

Marine Glue
Briggs Bituminous Composition Co.

Marine Hardware
Sands & Son Co., A. B.
Tiebout, W. & J.

Marine Heaters
(See Heaters)

Marine Paint
(Also see Paint)
Briggs Bituminous Composition Co., Inc.
Red Hand Composition Co., Inc.
Wailes Dove-Hermiston Corp.

Marine Plumbing
Crane Co., The
Sands & Son Co., A. B.

Marine Railway Builders
Crandall Engineering Co.

Marine Railways
(See Dry Docks)

Marine Ranges
(See Ranges)

Marine Refrigeration
(See Refrigerating Machinery)

Marine Repairs
(See Shipbuilders)

Marine Shafting
(See Shafting)

Marine Specialties
(See Steam Specialties)

Marine Superheaters
Babcock & Wilcox Co.
Power Specialty Co.
Superheater Co., The

Marine Supplies
Tiebout, W. & J.

Marine Wiring Devices
General Electric Co.

Masts, Tubular Steel
National Tube Co.

Mechanical Telegraphs
Radio Corporation of America

Metallic Packing
(Also see Packing)
Goetze Gasket & Packing Co.

Meters, Electric
General Electric Co.

Mineral Wool
(See Non-Conducting Covering)

Mooring Engines
American Engineering Co.
Hyde Windlass Co.
Lidgerwood Mfg. Co.

Motor Boats
(See Launches and Yachts)

Motor Boat Supplies
Tiebout, W. & J.

Motors, Electric
General Electric Co.

Motors, Gasoline
(See Gasoline Engines)

Multiwhirl Oil Coolers
Griscom-Russell Co.

Naval Architects
Bogert, John L.
Chapman & Fisher
Christensen & Snethlage
Donnelly, William T.
Ferris, Theodore
Griffin & Cathcart
Haag, A. H.
Haight, Robert S.
McClelland, N. E., & Co., Ltd.
Matthews, John B.
Moon, C. P.
Rossell & Thayer
Sharp, Geo. G.
Watts, J. Murray
Whittelsey & Whittelsey

Needle Valves
(See Valves)

Nipples
Crane Co., The
Lunkenheimer Co., The

Non-Toppling Blocks
Steward Davit & Equipment Corp.

Nozzles
(See Hose Nozzles)

Oakum
Stratford Oakum Co., Geo.

Oil
(See Lubricants)

Oils Burners, Fuel
(See Fuel Oil Burners)

Oil Burning Equipment
Bethlehem Shipbldg. Corp.
White Fuel Oil Engineering Corp.

Oil Coolers
Alberger Pump & Condenser Co.
Griscom-Russell Co.

Oil Cups
Crane Co.
Griscom-Russell Co.
Lunkenheimer Co., The
Powell Co., The William

Oil Engines
(See Engines, Oil)

Oil Fuel
Standard Oil Co. (New Jersey)

Oil Fuel Apparatus
(See Oil-Burning Equipment)

Oil Gages
Crane Co.
Lunkenheimer Co., The
Powell Co., The William

Oil Heaters and Coolers
Alberger Pump & Condenser Co.
Griscom-Russell Co.
Row & Davis, Engineers, Inc.

Oil Pumps
Davidson, M. T., Co.
Ingersoll-Rand Co.
Lunkenheimer Co., The
Powell Co., The William
National Transit Pump & Machine Co.
Sands, A. B., & Son, Co.
Warren Steam Pump Wks.
Worthington Pump & Machinery Corp.

Oil Purifiers
De Laval Separator Co.
Griscom-Russell Co.

Oil Tankers
(See Tank Ships)

Oiling Systems
(Also see Lubricants)
Lunkenheimer Co., The
Powell Co., The William

Ore-Handling Machinery
(See Coal-Handling Machinery)

Oxy-Acetylene Welding and Cutting
Prest-O-Lite Co., Inc.
Vulcan Iron Works, Inc.

Oxygen
Linde Air Products Co.
Prest-O-Lite Co.

Packing
(Also see Metallic Packing and Ammonia Packing)
Goets Packing Co.
Mustor Mfg. Co.

Packing, Asbestos
Crane Co.
McClelland, N. E.
Mustor Mfg. Co.

Paint
Briggs Bituminous Composition Co.
Federal Composition & Paint Co.
Marine Decking & Supply Co.
Red Hand Composition Co., Inc.
Wailes Dove-Hermiston Corp.

Paint Spraying Equipment
(See Pneumatic Paint Spraying Equipment)

Panelling
(Marine Fireproof)
Marine Decking & Supply Co.

Panels, Bulkhead
Haskelite Mfg. Corp.

Partitions
(Marine Fireproof)
Marine Decking & Supply Co.

Patents, Boat Design.
Hullfin Boat Co., Inc.

Pencils
(See Drawing Pencils)

Phosphor Bronze Castings
American Manganese Bronze Co.
Columbian Bronz Corp.
Griscom-Russell Co.
Hyde Windlass Co.
Lunkenheimer Co., The

Pile Drivers
Lidgerwood Mfg. Co.
McMyler-Interstate Co.

Pipe
American Brass Co.
Chase Metal Works.
National Tube Co.
Scovill Mfg. Co.

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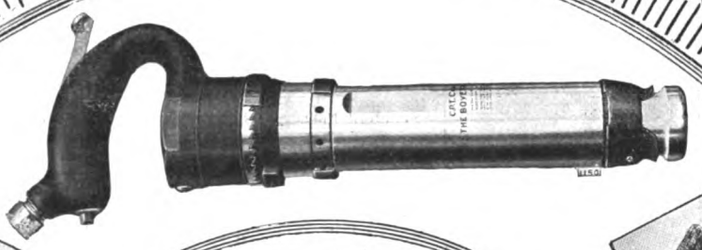
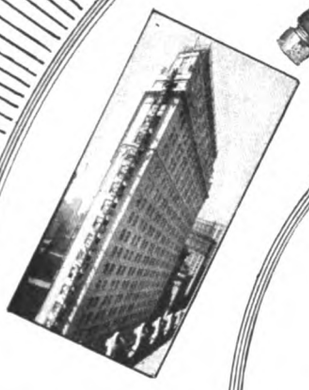
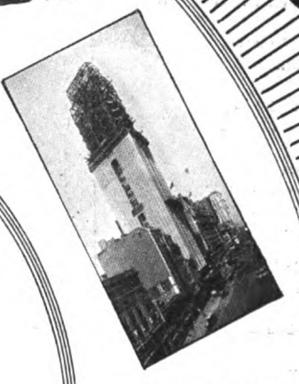
BOYER-SKYSCRAPER BUILDER





Above—Munson Building, N.Y.C. Contains 71,000 Boyer-driven rivets.



Above—Bush Building, N.Y.C. Contains 65,000 Boyer-driven rivets.

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Illustrated are but a few of the many skyscrapers Post & McCord have built with the aid of the Boyer.

With its speed of 850 to 2100 blows per minute, great driving power, ease of control and operating economy—the Boyer drives rivets, *all perfect, at least cost per rivet driven.*

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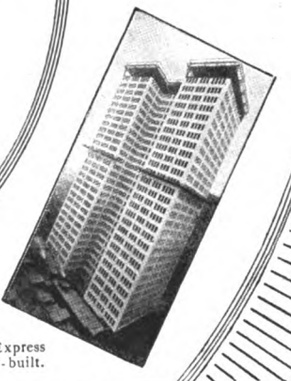
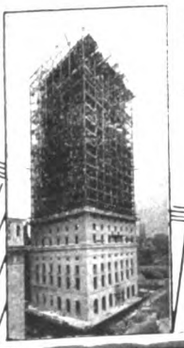
Above at left—Metropolitan Building, N.Y.C. Boyer-built



Above at right—Adams Express Building, N.Y.C. Boyer-built.

At left—Cunard Building, N.Y.C. Contains 157,000 Boyer-driven rivets.



At left—Yale Club Contains 60,000 Boyer-driven rivets.

At right—Astor Trust Building, N.Y.C. Boyer-built.

At right—Bankers Trust Building, N.Y.C. Contains 102,000 Boyer-driven rivets.

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CHICAGO PNEUMATIC

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Pipe Covering
(See Non-Conducting Covering)

Pipe Fittings
Atlas Valve Co.

Pipe Flanges
(See Flanges)

Pipe, Steel
National Tube

Pipe Unions
Atlas Valve Co.
Crane Co.
Lunkenheimer Co., The
Powell Co., The William

Pipe Wrenches
Williams & Co., J. H.

Piston Rings
(See Packings)

Planers
(Metal Working)
Cleveland Pneumatic Tool Co.

Plastic Fire Bricks
Jointless Fire Brick Co.

Plate-Bending Rolls
(See Rolls, Bending & Straightening)

Plate Casters
(See Casters)

Plate Shears
The Quickwork Co.

Plates
(See Steel Plates and Shapes)

Plumbers' Tools
Williams & Co., J. H.

Plumbing
(See Marine Plumbing)

Pneumatic Drills
(See Pneumatic Tools)

Pneumatic Hammers
(See Pneumatic Tools)

Pneumatic Hose
(See Air Hose)
Sands, A. B., & Son, Co.

Pneumatic Riveters
Ingersoll-Rand Co.

Pneumatic Separators
Griscom-Russell Co.

Pneumatic Tools
Cleveland Pneumatic Tool Co.
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.

Pop Safety Valves
Crane Co.
Lunkenheimer Co., The
Powell Co., The William

Poppet Valves
(See Valves)

Portable Drills
General Electric Co.

Portable Elevators
(For Handling Bulk Materials)

Power Hammers
The Quickwork Co.

Power Riveters
Ingersoll-Rand Co.

Power Shears
Quickwork Co.

Presses
(See Hydraulic Presses)

Pressure Regulators
Atlas Valve Co.
Crane Co.
Lunkenheimer Co., The
Powell Co., The William

Professional Cards
Aero Alarm Co.
Ansell & Bailey
Bogert, John L.
Bonner, William T.
Chapman & Fisher
Christensen & Snethlage
Ferris, Theodore
Griffin & Cathcart
Haag, A. H.
Haight, Robert S
Matthews, John B.
McClelland, N. E., & Co., Ltd.
Pommer, Walter E.
Rossell & Thayer
Sharp, Geo. G.
Watts, J. Murray
Whittelsey & Whittelsey

Projectors
(See Searchlights)

Propeller Shafts
(See Shafting)

Propeller Wheels
American Manganese Bronze Co.
Bethlehem Shipbldg. Corp.
Columbian Bronze Corp.
Donnelly, Wm. T.
Ferguson-Herbert Corp'n
Hyde Windlass Co.
Kearfott Engineering Co.
Trout Co., H. G.

Pumping Machinery
(See Engines, Pumping)

Pumps
Alberger Pump & Condenser Co.
Bethlehem Shipbldg. Corp.
Davidson Co., M. T.
De Laval Steam Turbine Co.
Exeter Machine Works.
Griscom-Russell Co.
Hyde Windlass Co.
Ingersoll-Rand Co.
Kerr Turbine Co.
National Transit Pump & Machine Co.
Row & Davis, Engineers, Inc.
Sands & Son, Co., A. B.
Warren Steam Pump Co.
Wheeler Mfg. Co., C. H.
Westinghouse Electric & Mfg. Co.
Worthington Pump & Machinery Corp.

Pump, Elec.
Exeter Machine Works.
General Electric Co.
Northern Fire Apparatus Co.

Punching Machines
(See Power Punches)

Punching and Shearing Machines
(See Power Machines and Shears)

Punch Tables
(See Spacing Tables)

Purifiers, Oil
De Laval Separator Co.

Pyrometers
Superheater Co., The
Taylor Instruments Co.

Quadrant Davits
(See Davits)

Radio Apparatus
Radio Corporation of America.

Rafts
(See Lifeboats and Rafts)

Ranges
Sands, A. B. & Sons Co.
Stamford Foundry Co., The

Ratchet Jacks
(Pulling and Pushing)

Reamers
Brubaker & Bros., W. L.
Chicago Pneumatic Tool Co.
Cleveland Pneumatic Tool Co., The

Reclaiming Systems For Oil
De Laval Separator Co.

Reducing Gears
(See Gears)

Reducing Valves
Atlas Valve Co.
Crane Co.
Lunkenheimer Co., The

Reflex Water Gauges
Jerguson Gage & Valve Co.

Refrigerating Machinery
Brunswick Refrigerating Co.
Frick Co.
Westinghouse Electric & Mfg. Co.
York Mfg. Co.

Regulators, Damper
Atlas Valve Co.

Regulators, Temperature and Pressure.
Taylor Instruments Co.

Releasing Gear
Steward Davit & Equip. Corp.

Relief Valves
Atlas Valve Co.
Crane Co.
Lunkenheimer Co., The
Powell Co., The William

Repairs, Marine.
Bethlehem Shipbldg. Corp.
Federal Shipbuilding Co.
Tickle Engineering Works, Arthur.

Rheostats
General Electric Co.

Rigging
(See Rope; also Wire Rope)

River Boats
(See Shipbuilders)

Rivet Busters, Rivet Clamps and Rivet Tongs
Chicago Pneumatic Tool Co.
Cleveland Pneumatic Tool Co., The
Ingersoll-Rand Co.

Riveters
(See Pneumatic Riveters and Power Riveters)

Riveting Machines, Hydraulic and Steam Power
(Also see Power Riveters and Pneumatic Riveters)
Chicago Pneumatic Tool Co.

Rods (Brass)
American Brass Co.
Chase Metal Works
Chase Rolling Mill Co.
Scovill Mfg. Co.

Rods, Welding
(See Welding Rods)

Rolling Sheet Metal Machines
The Quickwork Co.

Rope
(Also see Wire Rope)
Columbian Rope Co.
Plymouth Cordage Co.

Rope, Blocks
Union Hardware Co.

Rope Transmission
Columbian Rope Co.

Rotary Blowers
(See Blowers)

Rotary Pumps
Sands, A. B., & Son, Co.

Rotary Shears
Quickwork Co., The

Rowboats
(See Launches and Yachts)

Rubber Goods
(Also see Packing; also see Interlocking Rubber Tiling)

Rubber Tiling
(See Interlocking Rubber Tiling)

Safety Devices
(See Life Saving Devices)

Safety Valves
(See Valves)

Sanitary Fittings
(See Plumbing)

Sanitary Pumps
Davidson Co., M. T.
Sands, A. B., & Son, Co.
Warren Steam Pump Co.

Separators, Oil.
Babcock & Wilcox Co., The

Scuttles
Steward Davit & Equip. Corp.

Seamless Steel Tubes
National Tube Co.

Sentinel Valves
(See Valves)

Shaft Steel
(See Steel Shafting)

Shafting
(Seamless Steel)
Ferguson-Herbert Corp'n
Kearfott Engineering Co.
National Tube Co.

Shafting— Bronze
American Manganese Bronze Co.
Chase Metal Works
Chase Rolling Mill Co.
Scovill Mfg. Co.

Shearing Machines
(See Power Shears)
The Quickwork Co.

Sheet Metal Working Machines
The Quickwork Co.

Sheet Metal Shears
The Quickwork Co.

Sheets, Brass
American Brass Co.
Chase Metal Works.

Shipbuilders and Dry Dock Companies
Bath Iron Works
Bethlehem Shipbuilding Corp.
Charleston Dry Dock & Machine Co.
Cramp & Sons, Wm.
Federal Shipbuilding Co.
Fletcher Co., W. & A.
Johnson Iron Works, Dry Dock & S. B. Co., Inc.
Merchant Shipbuilding Corp.
New London Ship & Engine Co.
New York Shipbuilding Corp.
Pensacola Shipbuilding Co.
Standard Motor Construction Co.
Sun Shipbuilding Co.
Tickle Engineering Works, Arthur
Todd Shipyards Corp.
Vulcan Iron Works, Inc.
Ward, Chas., Engineering Works

Ship Brokers
Bogert, John L.
Ferris, Theodore
Haight, Edward S.
McClelland, N. E., & Co., Inc.
Pommer, Walter E.
Watts, J. Murray

Ship Clocks
(See Clocks)

Ship Compositions
Briggs Bituminous Composition Co.
Red Hand Composition Co., Inc.
Wailes Dove-Hermiston Corp.

Ship Cowls
(See Cowls)

Ship Design Licensees.
Hullin Boat Co., Inc.

Ship Design Patents
Hullin Boat Co., Inc.

Ship Fittings, Supplies and Equipment
Griscom-Russell Co.

Ship Glue
(See Marine Glue)

Ship Locks and Lathes
Tiebout, W. & J.

Ship Operators
International Mercantile Marine Co.
United American Line

Ship Plates
(See Steel Plates; also Zinc Ship and Boiler Plates)

Ship Repairs
(See Dry Docks and Marine Railways)

Ship Rivets
(See Rivets)

Ship Stores
(See Chandlery Stores)

Ship Timbers
Orr Co., John C.

Ship Upholstery
Pantasote Co., The

Shipyards
(See Shipbuilders)

Shipyard Cranes
(See Cranes)

Shipyard Whirlers
(See Cranes)

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"Vehisote" is a scientifically manufactured waterproof fiber board.

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NEW YORK

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(See Cranes)

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(See Sockets and Sleeves)

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(See Bench Tools)

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(See Lumber)

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(See Adjustable Sprocket Rims)

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(See Taps and Dies)

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(See Engines)

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Crane Co., The
Lunkenheimer Co.
Powell Co., The William
Taylor Instruments Co.

Steam Hammers
Chambersburg Engineering Co.

Steam Hoists
(See Hoisting Engines)

Steam Hose
Ingersoll-Rand Co.

Steam Pipe Coverings
(See Non-Conducting Coverings)

Steam Pumps
(See Pumps)

Steam Separators
Crane Co.
Griscom-Russell Co.

Steam Specialties
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(See Marine Superheaters)

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Griscom-Russell Co.
Pratt & Cady Co., Inc.
Sands, A. B., & Son Co.

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Alberger Pump & Condenser Co.
Bath Iron Works
Bethlehem Shipbuilding Corp.
De Laval Steam Turbine Co.
Fletcher Co., W. & A.
General Electric Co.
Kerr Turbine Co.
Kearfott Engineering Co.
Westinghouse Electric & Mfg. Co.

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De Laval Steam Turbine Co.
General Electric Co.
Kearfott Engineering Co.
Kerr Turbine Co.
Vulcan Iron Works, Inc.
Westinghouse Electric & Mfg. Co.

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(See Castings, Steel)

Steel Fittings
Reading Valve & Fittings Co.

Steel Pipe
Crane Co.
National Tube Co.

Steel Plates
(See Steel Plates and Shapes)

Steel Shafting
(See Shafting)

Steering Engines
American Engineering Co.
Hadfield-Penfield Steel Co.
Hyde Windlass Co.
Kearfott Engineering Co.
Lidgerwood Mfg. Co.

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American Engineering Co.
Bethlehem Shipbldg. Corp.
Hadfield-Penfield Steel Co.
Hyde Windlass Co.
Lidgerwood Mfg. Co.

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Hadfield-Penfield Steel Co.
Hyde Windlass Co.

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(See Valves)

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(See Ranges)

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(See Rolls)

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(See Marine Superheaters)

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National Tube Company

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Wheeler Mfg. Co., C. H.

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(See Shafting)

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Pneumacator Co.

Tank Gauges, Oil Storage
Pneumacator Co.

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Bath Iron Works
Merchant Shipbuilding Corp.

Tank Pumps
Davidson Co., M. T.
Warren Steam Pump Co.

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Continental Iron Works, The
National Tube Co.

Tanks, Welded Steel
Continental Iron Works, The

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(See Mechanical Telegraphs)

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Taylor Instruments Co.

Thermit Welding
Powell Co., The William

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Taylor Instruments Co.

Thermostats
Atlas Valve Co.

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(See Ball Bearings and Roller Bearings)

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(See Machine Tools)

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Towing Lines
(See Rope and Wire Rope)

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Lidgerwood Mfg. Co.

Transmission Rope
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Traps
(See Steam Traps)

Traveling Cranes
(See Cranes)

Trolley and Track Systems
McMyler Interstate Co.

Tubes
(See Boiler Tubes; also Condenser Tubes)

Tubes, Rods, Wires
(Copper, Brass and Bronze)
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Chase Rolling Mill Co.
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(See Boiler Flue Cleaners)

Tube Expanders
(See Boiler Flue

Tugs
(See Shipbuilders)

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Turbines
(See Steam Turbines)

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Williams & Co., J. H.

Turret Lathes
(See Lathes, Turret)

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(See Rope; also Cordage)
Columbian Rope Co.
Plymouth Cordage Co.

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(See Ship Upholstery)

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(See Steam Gauges)

Vacuum Pumps
Alberger Pump & Condenser Co.
Davidson, M. T., Co.
Ingersoll-Rand Co.
Warren Steam Pump Co.
Westinghouse Electric & Mfg. Co.
Wheeler Mfg. Co.
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Reading Valve & Fittings Co.

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Jenkins Bros.
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Powell Co., The William
Pratt & Cady Co., Inc.
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Sands, A. B., & Son Co.

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Frick Co.
Pratt & Cady Co., Inc.
York Mfg. Co.

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Valves, Reducing
Atlas Valve Co.

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Lunkenheimer Co.
Powell Co., The Wm.
Sands & Son Co., A. B.

Valves, Relief
Lunkenheimer Co.

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Powell Co., The William
Pratt & Cady Co., Inc.
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Lunkenheimer Co.

Valves—Water
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Jerguson Gage & Valve Co.
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Powell Co., The William
Pratt & Cady Co., Inc.
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(See Waterproof Fittings)

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(See Blowers)

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(See Pumps)

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(See Ship Brokers)

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Chase Rolling Mill Co.

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Pantasote Co., The

Wall Radial Drills
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(See Plumbing)

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Watertube Boilers
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Ward Engineering Works.
Babcock & Wilcox Co., The

Wattmeters
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General Electric Co.

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(See Welding and Cutting Apparatus and Supplies)

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(See Cranes)

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Powell Co., The William
Sands, A. B., & Son Co.

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Warren Steam Pump Co.

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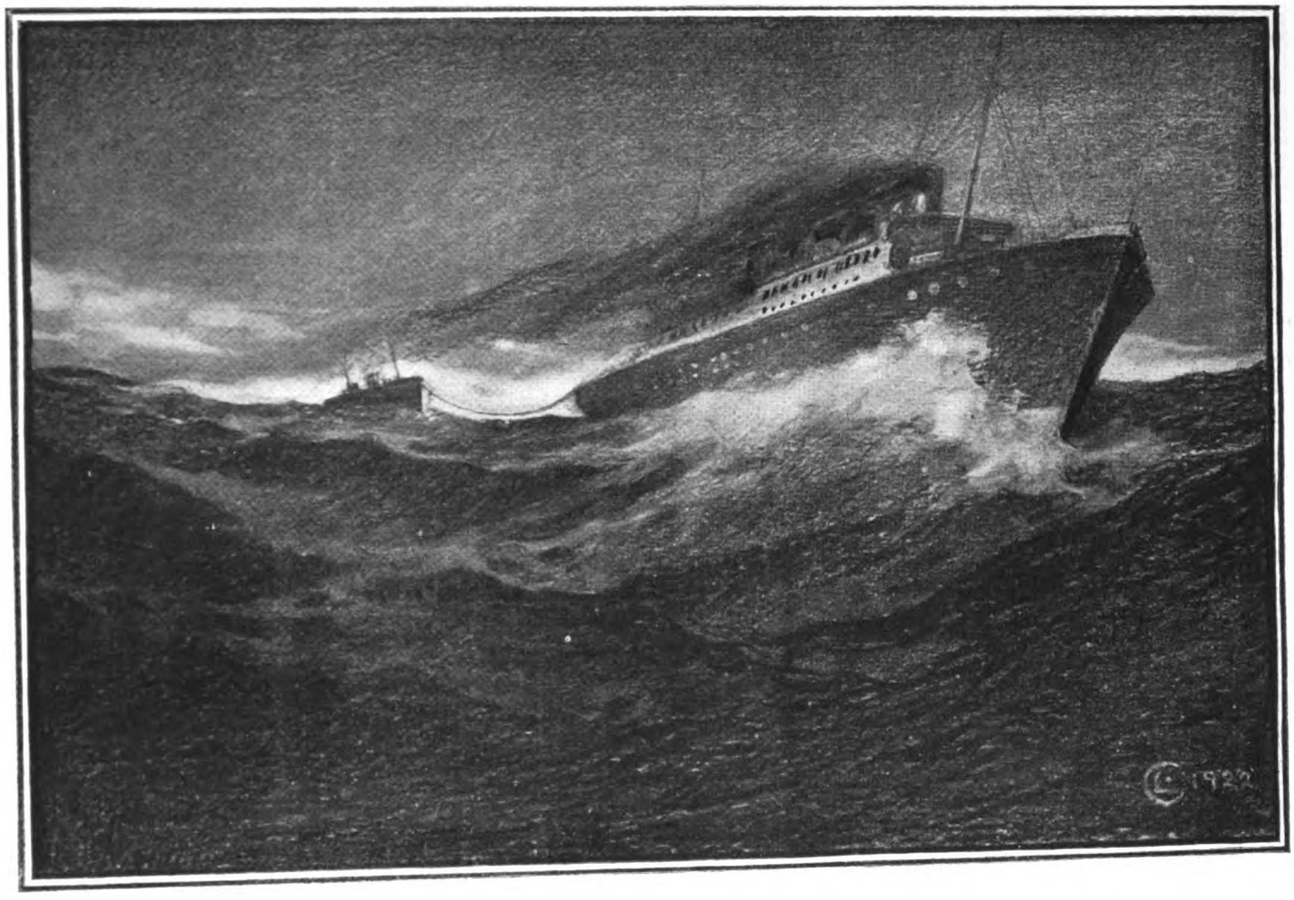

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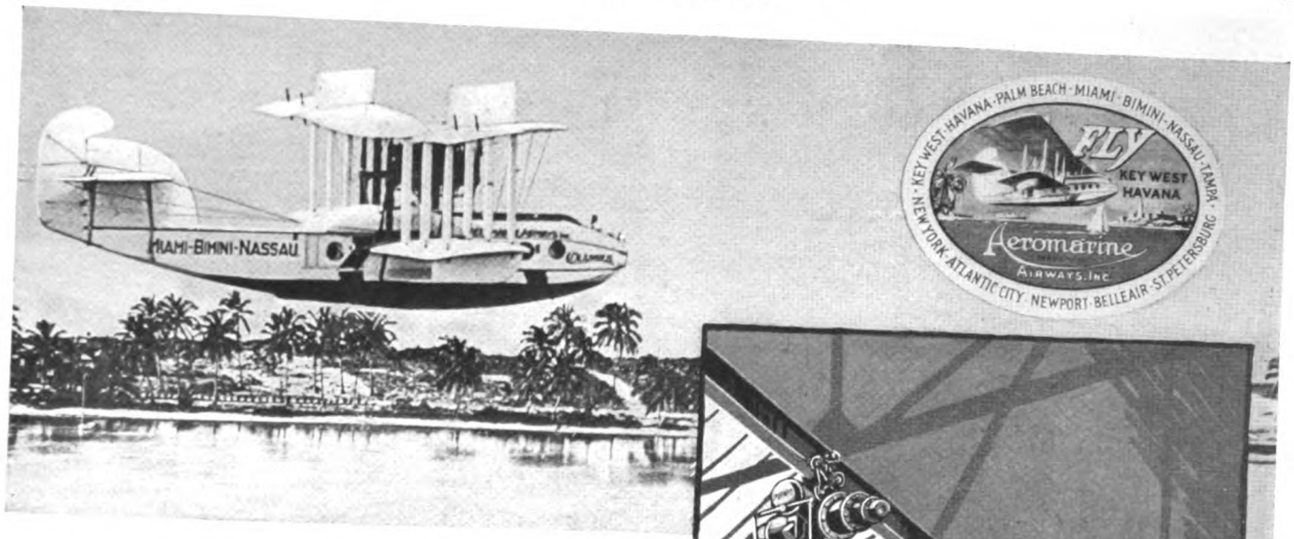
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LIFT ABOUT

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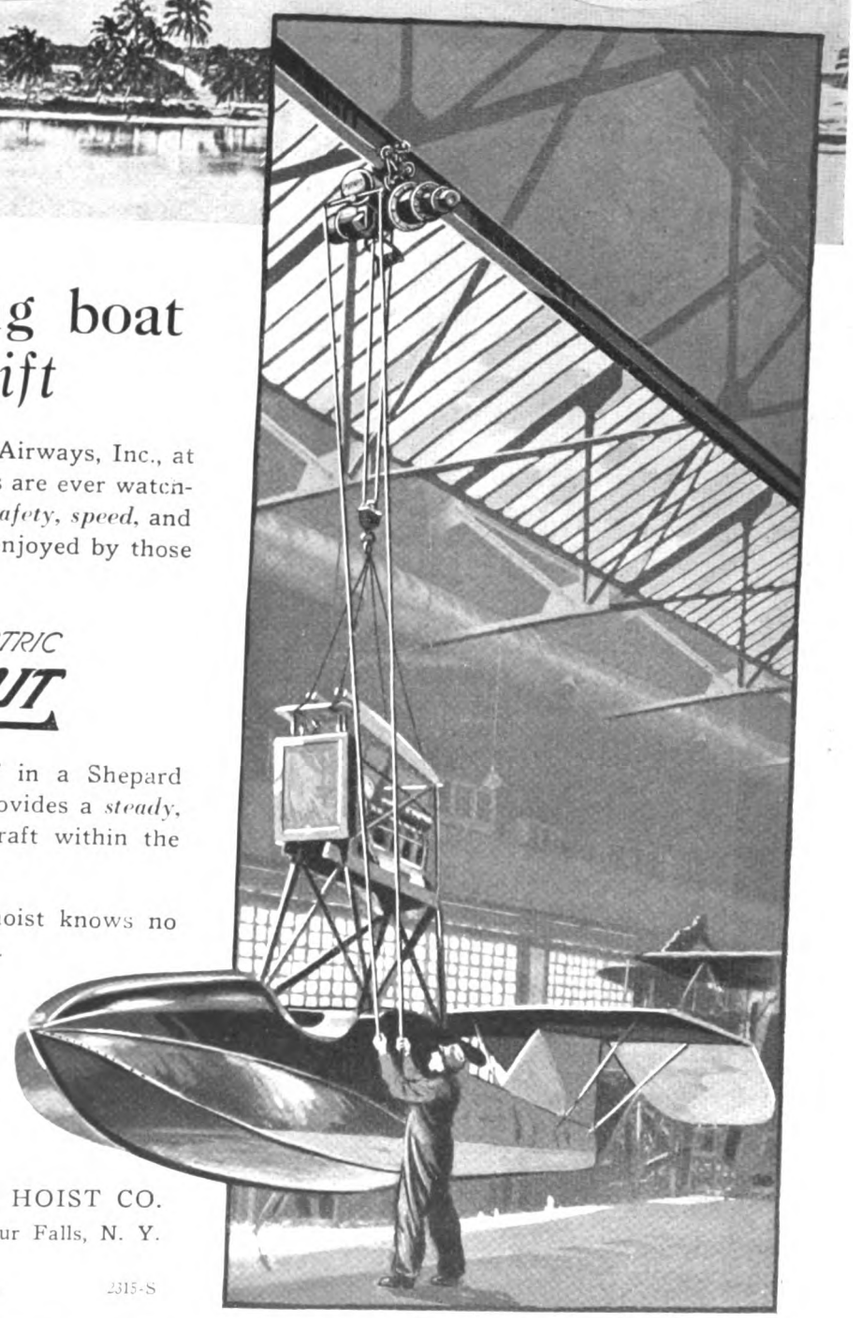

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Member Electric Hoist Mfrs.' Assn. 2315-S

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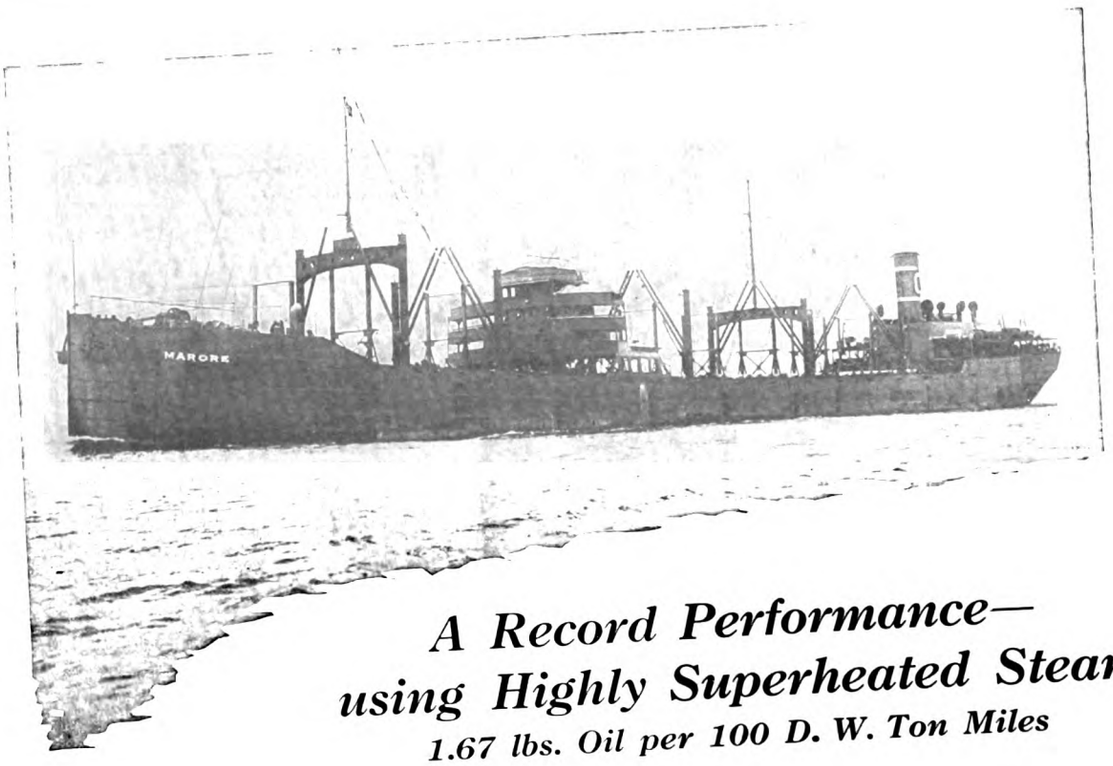

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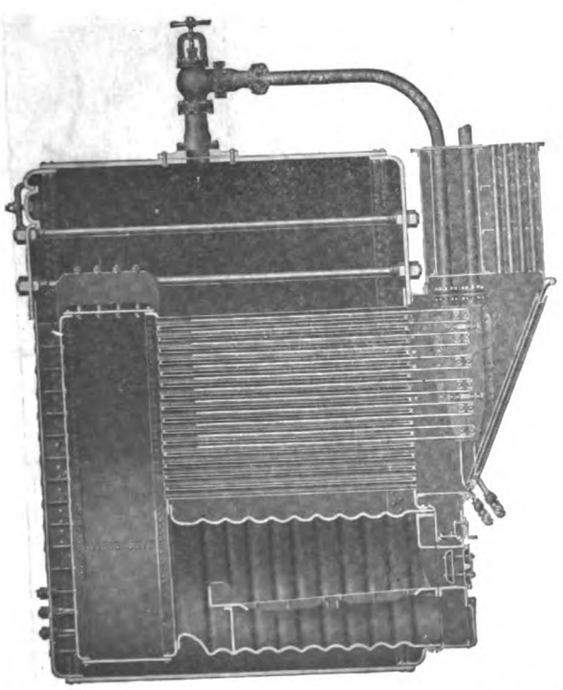

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Bethlehem Shipbuilding Corporation, Builders

D.W.T., 20,700.
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Average fuel per 24 hrs., 262 bbls.
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Superheat 200°.

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